DUE DATE SLIP

GOVT. COLLEGE, LIBRARY

KOTA (Raj.)

Students can retain library books only for two weeks at the most

BORROWER'S No	DUE DTATE	SIGNATURE

STUDIES IN ECONOMIC PROBLEMS

A COLLECTION OF SEMINAR PAPERS OF THE
DEPARTMENT OF ECONOMICS
CALCUTTA UNIVERSITY

GENERAL EDITOR
S K BASU, M A , Ph D
Professor and Head of the Department of Economics
Calcutta University

Foreword

Studies in Economic Problems is a collection of research and discussion papers, prepared by the Research Wing of the Department of Economics, University of Calcutta, during the period 1959-1961. Each of them had the benefit of being read and discussed at the Seminar of the members of the teaching and research staff of the Department.

Altogether nineteen papers have been incorporated in this volume. All them two papers are on specific problems of agriculture dealing respectively, with problems of investment, and of taxation of the agricultural sector; two papers are on concepts and problems of labour productivity in the industrial sector; as many as six of them are on various problems connected with foreign trade and payments viz. export promotion particularly the export of tea, terms of trade, bilateral payments agreements and the scarcity of foreign exchange resources; four papers are specifically on the financial aspects—two on banking and one each on taxation and public enterprises respectively; the rest of the papers save one are concerned with the broad and general problems of growth and stability of the economy in their historical, analytic and empirical or statistical settings; only one concentrates on the statistical and economic problems connected with the construction of cost of living index numbers.

In one of the papers on agricultural problems the writer has proposed a general scheme with some possible alternative variants to suit particular cases for providing incentives to more risky and at the same time to more productive types of agricultural investment in India by reducing the risk or uncertainty element of it. The first paper on labour productivity strikes on a methodical note and suggests that the most appropriate concept of labour productivity in the context of less developed economies might still be the simple output-labour ratio. It then uses such a concept of productivity to review all the relevant issues of labour productivity in an underdeveloped economy. The author tries to establish that in a capital scarce and skill deficient economy the role of trade unions on the incentive wage system to raise productivity may be rather restricted and he brings into sharp contrast the philosophy of the economy of high wage with the employment and social objectives of such an economy. He places emphasis on such neglected aspects of the problem as workers' education, an elaborate system of social security and the need for psychological researches in labour management relations and reveals the fallacy of technological development not balanced by social services. The fifth paper was desired by its author to be a part of his bigger work on secular trends in prices, wages and other economic phenomena in the Indian economy. The construction of long series of cost of living was therefore considered necessary for the purpose of

deflating money wage indexes to find out the real wage index An interesting feature of the article is the attention it has devoted to the cost of living indexes of the middle class An attempt has been made in this connection to find out who amongst the working and the middle class people were worse affected by changes in the price level The sixth paper is an attempt at giving an outline of financial (and commercial) aspects of public industrial enterprises in India It is found that of all the alternative sources of finance of the industries share participation by the government is of major importance Loans largely from the government also play an important role in the financial structure of the industries The eighth paper which was prepared before the question of insurance of bank deposits had been tackled on the governmental plane concludes that since most of the depositors in India are not themselves in a position to judge the soundness and integrity of bank the indirect benefits of deposit insurance largely outweigh its costs—the costs which the large banks think too much relative to the benefits derived The paper appearing next (ninth) should be of particular interest since the expenditure tax has been revived recently by the present Finance Minister The author attacks the alleged neutrality of expenditure tax with respect to risk taking only under certain circumstances—not frequent—may a switchover to an expenditure tax from an income tax promote risky investment so far as financial investment is concerned there is no reason why an expenditure tax should not discriminate against risk taking The fifteenth paper observes that the impact of changes in India's net barter terms of trade on her national income has been quite negligible on account of small proportion of real export to "real" national income that during the Plan era her net barter terms of trade and income terms of trade improved over pre Plan years in four and three cases respectively out of eight possible cases that devaluation did not lead to a deterioration in her foreign trade indicators except the gross barter terms of trade The last but one essay the eighteenth has shown how the technique of bilateral trade agreements has been employed as a useful instrument of commercial policy by Indian policy makers in recent years The principal features of India's payments agreements have been analysed in this connection and their significance has been clearly brought out The paper concludes by showing that payments agreements provide an excellent framework for financing the long term aid credits India is getting from the Soviet bloc

In editing these numerous and diverse papers I have received considerable help from my colleagues and research workers I must in this connection particularly mention the names of Prof Amlan Datta Sri Arun K Ghosh and Sri Amitava Sen who devoted a great deal of their time and energy to the task of classifying and arranging the papers in proper order

February 28 1964 S K Basu

Contents

AMITABHA SEN

Loss Limitation for Agricultural Investment

ULTIMATELY the rate of increase of agricultural productivity will depend not on the availability of better seeds irrigation facilities manures and expert advice relating to improved technique of cultivation but upon the extent of the use made of them by the agriculturists The latter brings in the problem of providing incentives to agricultural investment In India agriculture provides the outlet for one of the safest and profitable investments that is possible with very little technical knowledge and organisational capacity Besides investment in agriculture requires comparatively small amount of financial resources and that also need not be blocked for a long period of time Yet investment in agriculture can sometimes assume the form of one of the most risky investments This can be shown by a hypothetical example

Suppose on a piece of land an agriculturist invests Rs 100 in each year We further assume that from his long experience as a farmer he feels himself justified in expecting that out of five years in one year there will be flood and in another year there will be drought so that his gross revenue in these two years will be just nil In the other three years he however expects to get an 80 per cent return per annum on his investment Ignoring the problem of discount he gets a net amount of Rs 40 i e an 8 per cent return on average for five years Now suppose by following an improved method of cultivation (say the Japanese method) he can get 90 per cent return per annum on his investment but it costs him another Rs 100 Now if our investor is persistent enough over five years he comes out successfully once again with a net amount of Rs 140 i e a return of 14 per cent on average for five years But while the prospect of getting an additional 10 per cent may be an adequate reward to stimulate his switching over to the more costly process an additional 6 per cent may be too small to fire his imagination to adopt an untried method of cultivation

A much more important consideration lies in the fact that he cannot predict beforehand in which years the periods of absolute loss will occur By following the traditional method of cultivation he requires at most an investible fund of Rs 300 in the beginning so that even if absolute disaster happens and the periods of absolute loss follow each other in the first two years he is left with another Rs 100 to invest in the third year investments in subsequent years then can be financed out of the proceeds of the previous investment If the investor follows the more adventurous project such consecutive periods of losses may not only wipe out his

investible surplus but by affecting his credit position cripple him al together, so that he may be forced to sell his plot of land [1] Over a long period however, the periods of successful years will outnumber the periods of losses, but this may not bring any consolation to an investor who by following the more progressive method is deprived of his *masse de manoeuvre* What is more, he could have easily avoided such an un enviable position by following the traditional mode of cultivation to which he was used!

Now it is always up to the interest of the society as a whole that the more productive method of cultivation is encouraged because that will increase the yield per acre and help relieve the inflationary pressure in the face of an accelerated pace of economic development by increasing the marketable surplus In what follows we therefore suggest a self financing scheme for putting a floor to the possibility of loss, so that the investor can get at least a guaranteed rate of return if, and only if, he follows the improved method of cultivation [2] The details of the scheme need to be worked out by experts on the subject and some suitable adjust ments may be necessary for a proper functioning of the scheme in different regions to take into account the peculiarities of the tenure system the stage of economic development the availability of different grades of labour and other local characteristics of the regions in which the scheme is sought to be applied I shall however rest content with briefly outlining the main features of such a scheme which in my opinion would not prove administratively difficult to work out

(*a*) In the first place a number of energetic farmers, with adequate resources will be chosen throughout India It would be preferable if these farmers not only own but also be in actual possession of the lands in which they plan to experiment better methods of cultivation so that the introduction of improved techniques is possible without evicting actual tillers of the soil like share croppers or other tenants with no occupancy right

(*b*) There should be a cadre of trained personnel who would suggest to the actual farmer what crop to be raised what types of seeds to be used and advise the farmer on all other matters relating to the method of cultivation The farmer will carry on his instructions and at the end of cultivating operations will obtain a certificate that he has followed the technique of cultivation as suggested to him by the technician and also giving an estimate of total costs incurred by him

[1] In real life a farmer does not lose his entire investment in a period of flood or drought What is however absolutely necessary for the above analysis is that the return from investment in those years does not cover the amount of investment

[2] The essential idea of such a self financing scheme by taxing successful investors and guaranteeing a minimum rate of return for the losing ones belongs to G L S Shackle (*A Means of Promoting Investment* E J June September 1941 pp 249 60) The similarity of our present scheme with his scheme however ends there as Shackle suggested his scheme only for long term investment in a mature cycle-sensitive economy

(c) At the time of harvesting the crop there should be a representative of the government who would appropriate a stipulated share of the total produce if the yield of the land per acre is above a certain figure while if the yield per acre falls below the figure the government should reimburse the farmer the guaranteed rate of return on the total cost as certified by the technician The share of the crop appropriated by the government may either be stored in pursuance of a national food reserve policy or may be sold in the actual market In the former case the total value of the crop need to be imputed In order to be a self financing scheme the total revenue (obtained or imputed) from the government's share in the produce of successful farmers should meet the total cost incurred in reimbursing the losing farmers the guaranteed return on their certified cost

As an alternative the government may charge a tax on the net revenue of the successful farmers[3] If the farmer already has to pay agricultural income tax then the additional tax revenue resulting from increased income of the farmer as a result of the adoption of the superior method of cultivation as suggested by the technician may be added to the credit side of the suggested scheme If the rate of tax on the farmers income is not adequate for meeting the cost of putting a floor to the extent of other investors loss as envisaged under the scheme a further surtax may be charged to the purpose

The specific advantage associated with the latter proposal is that when the prices of agricultural products fluctuate the cost of the scheme as borne by the successful farmers will be more sensitive to their ability to pay But the crop-sharing arrangement as suggested before will be more easily workable In most villages of India farmers are traditionally used to crop sharing arrangements with share-croppers This would also give the farmer as well as the government the right to dispose of their shares in any way they like This would also minimise all sorts of controversy regarding the price at which the produce should be valued[4] Lastly the risk of fluctuating agricultural price has to be borne by all farmers whatever may be their method of cultivation To tackle that problem different types of measures are required which are not our concern at the moment. Personally speaking for reasons to me given later I do not think that the fluctuation of agricultural price would constitute a serious problem for the actual farmers in foreseeable future

(d) As regards the actual labourers to be employed there may be three alternatives

(i) While the capital is supplied by the actual owner of the land and technical knowledge by the technicians the actual cultivating operation may be left in the hands of share-croppers The advantage of such a

[3] This is a matter of administrative detail We may however note that our proposed scheme levies taxes in kind while the guaranteed return is in cash

[4] There can be no controversy as regards cost as it is already certified

tripartite arrangement is two fold In the first place the share croppers income being sensitive to the crop-yield they will be more interested than a casual or paid labour in working out the new process of cultivation a success Besides, both the share croppers and the landowners being the sharers of the total produce will take care that they are not deprived of their just claim on the total produce through unfair practices on the part of one party This will automatically ensure that the government also gets its true share unless both the landowners and share croppers act in unison—the possibility of which seems to me a remote one

As against these advantages we have to take into account a number of serious disadvantages In the first place it would be necessary that not only the landowners but also the share croppers should be willing to experiment with the rather unfamiliar method of cultivation Most of the share croppers are so poor and their education level is so low that they have most conservative ideas about the method of cultivation In the second place, it is rather unrealistic to assume that a landowner will supply all necessary capital when he has no control over actual cultivating operations (Thorner D II *The Agrarian Prospect in India* p 12) The agricultural expert will of course supervise the process of cultivation yet the landowners may not like the arrangement Lastly the insecurity of tenure of the share croppers may prevent them from exerting to that level which they are expected to achieve in their own land

(*ii*) The landowner himself may cultivate the piece of land with the members of his own family

(*iii*) Alternatively the landowner may supervise the cultivating operations and employ paid agricultural labour In the latter case the wage-cost can be more easily calculated Yet I do not think in the preceding case the estimation of wage cost would present an insuperable problem It seems to me when the landowners have a larger family the adoption of the previous method should be encouraged since in that case the labourers will take active interest in the successful operation of the new method of cultivation

(*e*) As a general rule cultivators dispersed over wide areas and cultivating different types of crops should be chosen to minimise the risk of the scheme If however the chosen cultivators are concentrated in a small region and cultivate the same crop then the cost of administration of the scheme may be minimised but a common disaster may affect each of them alike Besides one main benefit of the scheme will be the instances of successful farms which stimulate other cultivators to adopt more productive methods of cultivation At present the government has been following the policy of setting up demonstration farms throughout the rural areas In most cases these demonstration farms have not achieved the desired level of success I think that the average yield per acre so far produced in a demonstration farm by following a given

method of cultivation will substantially increase if the landowner himself supervises the cultivation operations and the labourers take active interest in increasing the yield of the land Moreover the other cultivators will take more interest in a technique of cultivation if by following that method one of his neighbouring farmers by employing the same grade of labourers that he can employ can increase the yield of his land substantially than in case a demonstration farm sponsored by the government and employing different categories of officials succeeds in producing even record output with that method

So the farmers who have turned out successful can more effectively fulfil the purpose of so many demonstration farms and for that purpose the more widely scattered they are the greater will be the resulting benefit We may also note that in course of various development programmes the government is already maintaining different categories of agricultural extension workers etc If the services of them can be properly utilised the maintenance of the cadre of technicians as envisaged under the present scheme would not land the government in additional expense

It now remains to be shown that for a successful operation of the scheme it need not be subsidised from other sources Reverting to our original example we have seen that over a long period the aggregate gains will exceed the aggregate losses So even after a judicious selection of the farmers from different regions and producing different crops it so happens that the number of successful farmers is less than the number of losing farmers in one year even then over a longer period the aggregate gains from the new method of cultivation will be greater than aggregate losses So if we assume that there are many ventures as assumed in our hypothetical example from which aggregate gains will exceed aggregate losses (ex post) but the fear of possible failure restrains the farmer from entering into such ventures preserving a sort of monopoly revenue for all who take such risks and come out successful then it would be possible to buy a large reduction in risks by guaranteeing a given rate of return by only a small tax on the crop yield of the successful farmers Moreover from a lower level of income the marginal disutility of further reduction in income may quite considerably outweigh the marginal utility of a further addition to income from an already high level Besides one main reason why the farmer may be reluctant to venture upon more productive investment may be that if he makes loss he will be brought down on the social ladder If the guaranteed rate of return simply keeps him in the social class to which he belongs the effect of the tax will be insignificant as a possible disincentive

In fact the problem would be not to find out a rate of tax with a corresponding guaranteed rates of return which will not only make the scheme self financing as well as find an adequate number of farmers willing to be covered by the scheme but to choose of the many specific rates of tax

and corresponding guaranteed rate of return which will serve the above two purposes which one should be chosen since it will always be possible to increase the floor by raising the rate of tax The obvious choice would be that pair of rates which will maximise the aggregate investment in agriculture on the part of the covered farmers Among other things I also leave it to the administrators of the scheme to decide which specific pair will achieve that goal In my opinion in order to make the scheme a success the guaranteed rate of return should be comparable with the expected return that can be obtained by a farmer by his present method of cultivation

It may be pointed out that whether the disincentive effect of the tax will be less than the incentive as provided by loss limitation is ultimately a question of fact and not of analysis The preparedness of the people to insure against various contingencies may be cited here as an indirect proof that most people are willing to buy a large reduction in unforeseeable risks at the cost of premiums paid in instalment Under the loss limitation scheme the farmer buys a reduction in risks only at the cost of the possibility of paying a tax in future Besides like an insurance scheme our scheme depends on the law of large numbers which states that while for a given individual the probability of a given contingency occurring cannot be ascertained for a large number of people actuarial calculation of the risk of a possible contingency is more or less calculable The success and profitability of different types of insurance organisations thus indicate in an indirect manner the possible success of a self financing loss limitation scheme

Unlike an all risk type of crop insurance scheme however the benefit of our present scheme is only extended to those who are willing to follow a prescribed method of cultivation In this latter respect our present scheme can be compared with the methods of supervised credit as practised in Latin American countries (*Manual of Supervised Agricultural Credit in Latin America* FAO 1953) The idea of supervision is important for the farmers through omissions and commissions may create conditions which favour the destructive forces of nature (Roy P K *Principles and Practices of Agricultural Insurance*) But while the method of supervised credit relies in general on prior acquisition by the government of a surplus generated in the economy or outright money creations the proposed scheme is for disposal of surplus in productive investment

The proposed scheme may be also compared with incentive land tax the main feature of which is that a portion of income is exempted from tax payments if it is productively invested The main virtue of our present scheme in relation to the former is that it is more easily workable

An objection may be raised against the proposed scheme that since successful farmers are taxed for subsidising the losing ones it discriminates against efficiency The objection would be a serious one if the success or failure depends upon the exertion of the farmers the scope of

which is limited there being a supervisor, who can refuse to certify a farmer if he shows some negligence on his part

Yet as a sort of preventive measure we suggest that too much loss limitation should not be attempted In general the amount of guaranteed return should be determined so that the farmer is not deprived of his investible fund The tax in the guaranteed rate may be varied over years so that in a period of general failure both the tax rate may be lowered and the guaranteed rate may be increased and vice versa The budget period over which the scheme should finance itself may be extended for more than one year

Lastly, it should be noted that the self financing character is not *sine qua non of the above scheme*, so that while we have shown that the scheme can be legitimately expected to finance itself there is no special point in making it self financing and under certain conditions such a scheme can be introduced even at a loss if social considerations require it

One basic assumption of the previous analysis is the existence of a sizable surplus in the agricultural sector which does not find its way into productive investment Once again this is a question of fact and not of analysis and once again we may cite such indirect evidence as the size of the rental income and interest payment that is exacted from the producing households the subsistence consumption level of agricultural workers and the continued increase in the terms of trade of the agricultural products from 1953-56 as can be seen from the following table

TERMS OF TRADE OF AGRICULTURAL PRODUCTS WITH INDUSTRIAL SECTOR
(1952-53=100)

Year	1955-56	1956-57	1957-58	1958-59	April to November 1959
Terms of trade	88 3	98 3	99 4	105 3	105 7

As a result agriculture has turned out to be a highly profitable industry so much so that the lure of easy profit has led to a large scale impenetration of the traders and commercial class within its folds [4]

Nowadays economists have shown increased awareness of the existence of this unutilised surplus and suggested measures for mobilising it for accelerating (or initiating) the process of industrialisation But the process of mopping up this surplus would be too difficult in a democracy oriented country like India The small savings drive etc would be of no avail as the rate of interest paid on such investments holds no comparison with that obtaining in the rural sector or with the rate of return on safe investments in agriculture Taxation measures (such as agricultural gains tax of China) will at the present moment only increase the price of land which will then be reflected in the price of foodgrains

[4] It is generally thought that the profit incidental to commercial revolution is so high that it is only at a comparatively later stage of industrialisation that the surplus of these classes is attracted by the industrial sectors (Hoffmann, W G., *The Growth of Industrial Economics* p 34)

Such a rise in price will then increase the cost of all types of investments at a magnified amount cutting down the surplus of the industrial sector in a slow but steady process

Can then the appropriators of this surplus be induced to invest on a large scale in industrial projects? In the first place, even if they are willing the investments they plan may not be of the suitable type for accelerating the pace of industrialisation Secondly industrial investment falls outside the technical horizon (Downie J, *The Competitive Process* p 100) of these investors within which they may consider the possibility of entering In most cases they are still slaves to the pre capitalist mentality that what is obtained out of land should be spent in land At most they can only be willing to invest in the processing of agricultural products or trading in agricultural or allied commodities

Agricultural production however cannot be permanently increased beyond the capacity of the market to absorb it The demand for most of the agricultural products being inelastic such over production will lead to a sharp fall in agricultural prices But it is a common experience of industrialised countries that the first stage of industrialisation is characterised *by a heavy demand on food and raw materials* This together with the increase in population and scarcity of land almost guarantees that the price of agricultural products will rise almost continuously in the coming years In fact during 1955 56 to 1958-59 both agricultural production and agricultural prices have risen simultaneously so that they show a positive correlation of 0 59 The above shows that one important way in which the surplus generated in agricultural production can contribute to the process of industrialisation is by increasing the agricultural productivity per acre of land

If the rise in the agricultural productivity can hold rising agricultural prices in check then it will not only blow up the surplus of the industrial sector but will also make it feasible to concentrate on credit financed or other types of public investments in social overheads or producers goods industries The growing productivity of the agricultural sector will also solve the marketing problem of the growing industrial sector—so that any rise in industrial productivity will not be neutralised by adverse terms *of trade resulting in the growth of unutilised capacity*

Can our suggested scheme help in increasing agricultural productivity? To make a realistic appraisal of it we must first of all note that during recent years investments have been made on a large scale in social over *head and irrigation projects* These *together* with *the* unutilised *stock* of technical knowledge make it possible to increase agricultural productivity without requiring a great increase in capital investment Of course as a general rule the surplus generated in agriculture accrues to non cultivating landowners and the money lending class by virtue of their ownership of scarce factors like land and finance and as they are not directly interested in cultivating operations they cannot be brought under the present scheme But there is no reason to believe that large cultivat

ing owners have no surplus of their own Although conditions will differ in different regions of India the continued increase in the terms of trade in favour of agriculture will inflate the investible surplus that is already in their possession But once by investing in only small doses these farmers succeed in achieving higher productivity and the initial barrier to technical change is overcome even these non cultivating owners and the traders will be more interested in undertaking investment projects directly with the help of cultivating labourers or they may finance such investment undertaken by owner cultivators The success of our scheme however will essentially depend upon how far the government can convince these investors that the rising agricultural prices will only be a passing phenomenon so that it is up to their interest to make hay while the sun still shines Otherwise if a continued increase in land price is foreseen a sizable portion of the investible surplus will be drawn into investments in land speculation thus further raising the demand for land and its price—which will then be reflected in the prices of foodgrains

In the long run growing productivity of the agricultural sector will provide an expanding market for the industrial sector which will then be able to absorb a large portion of the surplus agricultural workers and by exerting a downward pressure on the price of land will help overcome the resistance against consolidation measures

A Case for Higher Land Tax in India

AGRICULTURE in India occupies a dominating position in the economy At present 70 per cent of the population depend on agriculture and about 18 per cent of the national income is the contribution of agriculture It is presumed that a portion of agricultural surplus is remaining idle with agricultural people and with the help of agricultural taxes this surplus could be mobilised for economic development

The very size of agriculture in India creates a strong presumption that there is scope for higher agricultural taxes in India It is also alleged that the agricultural sector is not contributing its due share to the developmental expenditure but it is enjoying the increasing benefits of economic developments

Higher agricultural income in India is due to relative rise in prices of agricultural commodities and realisation of higher income through increased price has been possible by a section of agricultural people through concentration of lands in few hands Index of agricultural production (general) in recent years is also in favour of big landholders As regards the contribution of agricultural sector to the tax revenue of India it has been pointed out that the overall relative tax burden of lower and middle income groups both in rural and urban sectors are not very significantly different In case of higher income groups in two sectors tax burden is significantly different Higher income in urban areas is highly taxed Attempts have been made to justify higher rate of land tax to take away a portion of higher agricultural income

It has also been pointed out that income of small farmers (with less than five acres of land) has not experienced any marked rise in income in real terms though money value of their produce is fairly high Therefore in the suggestion for higher land tax these small farmers have been recommended for sympathetic consideration

Land tax at a progressive rate seems to be suitable to take away a portion of large income in agriculture as in any tax consideration amount of income is important not the source of income

[*N B* The terms Land Revenue and Land Tax have been frequently used in this paper meaning the same thing There is a wide controversy as to whether land revenue is a tax or not but the author of this paper does not go into that controversy and he prefers to call land revenue as tax Reasons are not discussed here]

Agriculture in India still occupies a dominating position in the economy from a number of points of view of which the size of population directly

and indirectly depending on agriculture for its living and its contribution to the national product of India is most important At present 70 per cent of the population directly depend on agricultural and live in rural areas According to the CSOs (Central Statistical Organisation Govt of India) preliminary calculation about 47 69 per cent of the national income in 1958 59 was contributed by the agriculture (*Reserve Bank Bulletin* May 1960 p 779) *This* 47 69 *per cent of national income is calculated at* 1948-49 *prices* (Recent Preliminary estimate shows that in 1959 60 agriculture s share of national income has reduced to 46 per cent at 1948-49 price)

In our all-out drive for economic development we are committed to a huge amount of capital investment in different fields of the economy and this throws greater and greater responsibility on the fiscal authorities of India making the fiscal system more complex In their stride for providing increasing resources for investment the fiscal authorities in India cannot leave aside the agricultural sector—the vast single sector in India In recent years the study and analysis of agricultural fiscal problems in India have been gaining tremendous importance and it is increasingly becoming urgent Our mixed economy with a relatively fast growing public sector calls for increasing resources for continuous development and expansion of public sector and this need for resources highlights the need for generation and effective mobilisation of surplus in all corners of the economy including the agricultural sector

Creation of surplus within the economy for self sustained growth of economy is a necessary condition but this is not a sufficient condition the question of location and effective mopping up operation of surplus are equally important and complementary conditions Creation of surplus is a function of higher productivity per acre and per labour in agriculture and its proper distribution This problem will not be touched here in our present discussion we shall confine our attention in pointing out the existence of surplus in agriculture and to the possibilities of mopping up of existing surplus and that will arise in future in agriculture through agricultural taxation

By agricultural tax we mean the tax which is imposed on agricultural land and the produce of agriculture Taxation of agricultural land taxation of agricultural produce and taxation of agricultural income—these are the important types of agricultural taxes that have been developed in different parts of the world together with some quasi tax measures to take away a portion of agricultural income In India land tax (land revenue) and agricultural income tax are the most important types of agricultural taxes and these taxes are directly paid by assessees Hence forth we shall talk about land tax in India only and the base of land tax in most parts of India is annual rental value with minor variations The reasons for taking land tax for our present study are various — land tax based on ownership or use is easier to administer where land rights are recorded income media or commodity taxation do not seem at present

fiscally attractive in Indian agriculture land tax is a mass tax and there is relative certainty of yield and this certainty of yield is extremely important in recent years land tax's importance in the State budgets—these are the reasons for undertaking land tax for immediate consideration and we think effective utilisation of land tax may bring a portion of surplus agricultural income for investment in desirable lines

Increasing supply of resources are extremely important for investment in different lines and in this paper we are making an attempt to explore the possibility of drawing more resources from agriculture through land taxation — a tax which has remained relatively fixed for decades when agricultural income has undergone a marked change The size of the agricultural sector in India its contribution to the national income of India and its humble contribution to tax revenue of India in spite of increased agricultural income — all these factors give rise to a strong presumption that there is scope for higher land tax in India — the main tax paid by agricultural class — and imposition of higher land tax will enable the government to take away a portion of increased agricultural income which is lying idle or is not being properly utilised for the economy It is also alleged that the agricultural sector is not contributing its due share to the development expenditure but it is enjoying many benefits that are becoming increasingly available due to huge expenditure in different sectors of the economy including the agricultural sector It can be pointed out that considering its size and its share in the national income of India the agricultural sector should contribute more to developmental expenditure than what it is now doing Let us study the possibility

Before going to study the possibility of higher land tax let us first study the present contribution made by the agricultural sector towards tax revenue of India through agricultural taxes The agricultural sector in India contributes to the tax revenue of India through taxation and the amount of contribution through agricultural taxes is a function of agricultural tax structure in India and tax paying capacity of agricultural people Tax paying capacity of any sector of economy will depend on its relative share to national income contribution the pattern of income distribution in that sector and the place of that sector in the overall economy Share of agriculture in national income is a partial indicator of taxable capacity of agricultural sector in India

In India agriculture contributed about 48 per cent of the total national income (at 1948-49 price) in 1958-59 The agricultural sector pays two important taxes in India — land tax and agricultural income tax Agricultural income tax is paid by very big farmers landlords and companies producing agricultural commodities (plantation) In recent years due to the abolition of zamindary system agricultural income tax is mainly paid by plantation companies Land tax is the main tax that is paid by all types of agriculturists owning land and this forms the main agricultural tax in India But still in India land tax constitutes a relatively small propor

tion of total tax revenue of India In the year 1960 61 (Budget) land tax collection constituted only 8 2 per cent of the tax revenue of India (*the percentage is calculated by the author from budget figures*) In 1951-52 the share of land tax to total tax revenue of India was 6 8 per cent (*T E C Report, 1954*, Vol III, p 216)

Land tax is almost universal in India from time immemorial and it is difficult to point out when and in what form the collection of land tax was started The present system has been the result of a long process of change and development overtime Land revenue was the most important source of revenue in the 18th century but its importance gradually started to decline from the middle of the 18th century This declining importance of land revenue in the fiscal system of India will be clear from the following table

TABLE 1

LAND REVENUE AS PERCENTAGE OF TOTAL TAX REVENUE OF INDIA

Year	Percentage	Year	Percentage
1793-94	69 0	1938 39	16 1
1808-09	61 1	1951-52	6 8
1818-19	73 1	1953-54	8 6
1839-40	70 6	1956-57	10 8
1850-51	66 5	1958-59	8 44
1871 72	42 8	1959-60 (Revised)	8 31
1881 82	35.5	1960-61 (Budget)	8.2
1891 92	36.5		
1901 02	33 9		
1911 12	31 3		

From 1850-51 to 1951-52 land revenue as a percentage of total revenue declined steadily (Figures up to 1951-52 are taken from *T E C 1954* [Taxation Enquiry Commission 1954] Vol III p 216) (Figures from 1953 61 are calculated by the author—Sources *Budget materials*) A rise during the period 1953 61 is due possibly to integration of former princely states with India land reforms and abolition of intermediaries and establishment of direct contact between the cultivators and the government as the pattern of land reform in India is in line with ryotwari system—extension of cultivation seems also responsible for higher yield from land revenue Though absolute collection of land revenue has increased the rate of increase in land revenue has not been able to keep pace with the rapid growth of receipt from other fast developing sources of revenue This failure to keep pace is explained by inelastic nature of land tax in permanently settled areas and postponement of settlement long over due in ryotwari areas With the abolition of zamindary system and other intermediate interest the nature of land tax in India has not undergone any marked change

Postponement of settlement has not only held land revenue from increasing contribution it has brought discrimination among different areas in

respect of tax payment by the farmers In permanently settled areas and in some States, agricultural income tax was imposed at different times to increase revenue from agriculture But in the States where there was no such agricultural income tax, big farmers and landlords continued to enjoy higher income without any corresponding higher contribution to the State exchequers With the growth of industries, trade and commerce, other newer sources of taxation are becoming more productive for revenue earning purpose and the government's comparative neglect of land revenue on political and economic grounds is responsible for lower percentage of land tax contribution

Absolute amount of land revenue collection has been rising for reasons other than rise in rate of tax and the burden of fixed rate has been reduced considerably in post-war (II) years for different reasons of which rise in price of agricultural commodities is most important Post-war price level recorded well above four times increase over pre-war price Growth of industries and increasing population have brought greater diversification in agriculture with higher demand for food and cash crops All these, as natural consequences, have been followed by higher price for agricultural goods, leading agricultural income increased by several times in recent years Thus rise in agricultural income, followed by relatively rigid rate of land tax (*the main tax paid by landowners*), has reduced the burden of land tax Fixed tax rates with rising money incomes due to increased money value of crops, really indicate that the ratio of land tax to agricultural income of cultivators has gone down gradually with rising price The lower this ratio (land tax agricultural income), the lower will be the burden of land tax Higher price for agricultural commodities has increased agricultural income in general and especially the income of big farmers who own large area of land Larger amount of land is concentrated in the hands of the smaller number of people and this concentration of land together with higher price for agricultural commodities has given rise to an income disparity among agricultural people Though a ceiling has been imposed on landholdings in many States, the extent of ceiling is fairly high and not uniform in all States and larger landowners have been allowed to retain a good portion of land at their choice Figures relating to the actual implementation of the land reform measures are not available at present In such circumstances we use the figures published in the *NSS* (National Sample Survey) *Report No 10* Though the results which we shall find in the following analysis based on the NSS figures will not be exactly applicable in very recent years yet we shall possibly be able to get a good idea about the position of landholdings and extent of possible income disparity in rural agricultural people Imposition of ceilings on landholdings has partially changed the position of big farmers, but the position of small and medium farmers is remaining the same Income differences in rural areas are mainly based on the quantum of land held by each individual agricultural people

As regards concentration of land as we have pointed in the previous section the following table will tell that higher percentage of land is occupied by smaller percentage of landowners Average size of holdings in India is 4 72 acres per household This size comes to 6 05 acres if we exclude the households holding no land or holding less than 0 005 acre The extent of concentration of land would be clear from the following table where figures are taken from the N S S Report *(8th round—First Report on Land holdings—Rural sector Report No 10)*

TABLE 2

PERCENTAGE OF HOUSEHOLDS OWNING LAND BELOW SPECIFIED SIZE OF OWNERSHIP HOLDINGS AND CUMULATIVE PERCENTAGE OF TOTAL ACRES OWNED BY THEM

Specified size of House hold ownership holdings (Acres)	*All India Cumulative percentage of House holds (Percentage)*	*Cumulative percentage of Total Acres (Percentage)*
1 00	46 89	1 38
5 00	74 42	16 17
10 00	87 29	35 99
20 00	95 07	58 99
50 00	99 14	84 40

74 per cent of households own less than five acres of land and they occupy only 16 per cent of total area, 87 per cent own less than ten acres and they occupy 36 per cent of the total area The remaining 13 per cent of the households own 64 per cent of the total area Lower percentage of households own larger percentage of holdings This class with larger landholdings enjoys maximum benefits of price rise and other benefits that are coming to agriculture Larger land brings increased income when the tax contribution remains the same Higher land tax with progression seems possible in this class with larger holdings

The picture of operational distribution of land is also in favour of big farmers 78 11 per cent of the households owning holdings less than five acres each are not leasing out lands 71 12 per cent of the households owning less than 15 acres are not leasing out lands 63 37 per cent and 56 06 per cent of the households owning less than 50 acres and above 50 acres respectively by each household are not leasing out land This comes to say that 69 23 per cent of the total lands are owned and self operated 12 48 per cent of total households partly leasing out lands and their leased out lands constitute 28 93 per cent of total land 2 07 per cent of total households fully leasing out land and their lands constitute 1 84 per cent of total land (Source *N S S Report No 10*)

The picture given above indicates better economic conditions of the big farmers These big farmers own large areas of land and obtain surplus production for sale in the market at increased prices The income of this class has gone high in recent years but their contribution to tax revenue has not increased following larger income Index of agricultural

production during the two plan periods will also indicate better position of agriculture from the production point of view

TABLE 3
(1949 50=100)

	1950 51	1955 56	1960-61 (*expected*)
All commodities	95 6	116 9	135 0
Food crops	95.5	115 9	131 0
Other crops	105 9	120 1	143 0

(The table is taken from the *Draft Third Five Year Plan* p 17)

Coming to the question of relative contribution of agriculture and non agriculture sectors to the tax revenue of India there is a wide presumption that the agricultural sector is not contributing its due share to the exchequer The important taxes that are paid by agricultural people are land tax (known as land revenue in India) agricultural income tax and a part of certain indirect taxes Land tax is fixed and the rate is also not progressive and therefore land tax contribution of individual agriculturist has not increased following higher agricultural income Agricultural income tax is paid by limited number of people and this tax is not adopted in all States of India Even where agricultural income tax is collected the amount of collection is not very high because of difficulties in obtaining correct information regarding actual income of landowners Sales tax is a consumption tax and the amount of sales tax contribution depends on the volume of sale and efficient machinery for collection of the tax It is evident that urban and city people contribute more to this tax revenue because of the facts that diversification of consumption is responsive to change in income and such diversification of consumption is prominent among urban and city people The consumption pattern of the urban people is also substantially different from rural people mostly consisting of agricultural people Rural people mostly spend on food items and these articles are generally exempted from sales tax The following table will indicate interesting results about the indirect tax burden of rural and urban people

TABLE 4

BURDEN OF INDIRECT TAX IN RURAL AND URBAN AREA ON DIFFERENT INCOME GROUPS ANNUAL PAYMENT OF INDIRECT TAXES (CENTRAL AND STATES) AS PERCENTAGE OF TOTAL EXPENDITURE BY DIFFERENT INCOME GROUPS IN RURAL AND URBAN AREAS

Income per annum	*Tax Payment as percentage of total expenditure*	
	Rural	*Urban*
Rs upto 600	2 2	3.3
Rs 600—Rs 1 200	2 3	4 4
Rs 1 200—Rs 1 800	2 7	5 1
Rs 1 800—Rs 3 800	2 8	5 1
Rs 3 600—above	4 4	8.3

SOURCE *T E C 1954* Vol I p 69

The above table shows that percentage contribution of indirect tax in rural areas is almost the same from an income of Rs 600—Rs 3 600 This possibly indicates how ineffective the indirect taxes are in raising higher revenue from rural areas Element of progression in tax payment is not very significant in rural higher income groups All rural people are not agricultural people but all agricultural people are mostly rural people Percentage of agricultural people in rural India is very high and agricultural income represents more than 90 per cent of rural income and rest of the income is influenced by agricultural income Therefore we think, we have a good reason to accept the figures relating to the rural sector (in Table No 4) as indicative of tax burden of agricultural sector The table also indicates relatively rigid consumption pattern in rural areas and hints at the limited scope of indirect consumption tax in rural areas It is argued that the relatively rigid consumption pattern of rural people (as shown by the Report) is likely to have changed in recent years following increased income generated by plan expenditure and changing habits of rural people The Report was published in 1954 and its findings regarding the rural consumption pattern may not hold good today There is some truth in this argument but we think that the change is not likely to be radical in nature War and immediate post war years were marked for sudden rises in agricultural income but this increased income did not bring any very substantial difference between indirect tax contribution of different income groups in rural area

The burden of indirect tax is partly a function of tax structure of the country If we go through the budgets of the Centre and States we shall not find any remarkable change in the structure of indirect taxes The important changes that have been brought in tax structure in recent years are mostly confined to the field of direct taxes The changes that have been introduced in indirect taxes have not affected the rural people so significantly as they have affected the urban and city people Even today there are marked differences between rural and urban expenditure habits but there are little differences between expenditure groups in rural area in respect of expenditure pattern This is especially true in the case of lower and middle income groups Indirect tax burden of very high income is likely to have changed in recent years

Agricultural income recorded a rise from Rs 4 890 crores in 1950-51 to Rs 6 190 crores in 1958-59 — that is a rise by 26 58 per cent (Agricultural income at current price) But this rise in income has not been followed by any appreciable rise in main taxes paid by agricultural people Contribution of agricultural sector through land tax and agricultural income tax — the two main direct taxes paid by the agricultural sector — may be seen from the following table

TABLE 5

LAND REVENUE (CENTRE AND STATES) + AGRICULTURAL INCOME TAX AS PERCENTAGE OF TOTAL AGRICULTURAL INCOME (AT CURRENT PRICE)

Year	Per cent	Year	Per cent
1951 52	1 09 (1.23)	1955 56	1 92 (1 77)
1952 53	1 28 (1.34)	1956-57	1 79 (1 68)
1953-54	1 41 (1.5)	1957 58	1 61 (1 91)
1954 55	1 81 (1 55)	1958 59	1 63 (1 81)
		1959 60 (Prelim nary)	1 71 (1 96)

Figures in the brackets are calculated taking agricultural income at 1948 49 prices (This table is prepared on the basis *Budget figures* regarding Land Revenue and Agricultural Income tax and Total Agricultural income from *Estimates of National Income—C S O*)

This table cannot express the full tax burden of agricultural people as parts of other indirect taxes are also borne by the agricultural people As regards sales tax and some other consumption taxes we have noticed that due to a relatively rigid consumption pattern agricultural people contribute smaller share of such taxes Even if correct information regarding full tax burden of the agricultural sector is available from our previous analysis possibly we may assume that the total tax burden of agricultural sector would form a very insignificant portion of the total agricultural income

According to a *T E C* (*1954*) finding 70 per cent of the rural house holds spend less than Rs 1 200 per annum 25 per cent of the rural house holds spend Rs 1 200 3 000 *per annum* Only 5 *per cent of* the rural households spend Rs 3 000 and above annually The last two spending groups are lightly taxed and there is scope for higher tax Now we examine the scope

So far we have tried to analyse the lower tax burden of the agricultural sector relative to higher agricultural income in post war years but any study of agricultural tax burden on agricultural people for our purpose will have little significance except in relation to the tax burden direct and indirect of other sectors specially of the urban sector where the burden of indirect taxes is much higher than indirect tax burden of the agricultural sector (Table No 4)

It has already been noted that the rate of land tax has not been changed with rising income therefore it is obvious that any rise in tax *contribution of the agricultural sector could have been possible only* through higher indirect taxes on agricultural people But we have observed that total indirect tax burden of agricultural people of different spending capacity is not substantially different T E C points out that the burden of incidence of indirect tax is almost similar between the lowest and highest income range in the agricultural sector Thus indicates that rise in income in the agricultural sector does not represent proportionate larger demand on non agricultural commodities in case of Indian agricultural families and their relative unwillingness to increase expenditure with rising income

In case of the urban sector the burden of indirect tax is high Urban incidence of sales tax is higher than rural incidence of sales tax This is because rural consumption is less responsive to higher income and purchases in rural area escape taxation partially either because supplies are from scattered local sources or the goods are legally or virtually exempt from sales tax (*T E C 1951* Vol I p 69) This analysis partially holds good in cases of other indirect taxes If the burden of indirect tax is lower and consumption is not proportionately responsive to changes in income (higher income) we can possibly assume that the higher income group enjoys surplus income and there is scope for higher taxation to take away a portion of surplus income

We have noticed that the burden of indirect tax in urban areas is higher (Table 4) But if we add the burden of land tax and income tax to the burden of indirect taxes of rural and urban sector we possibly get somewhat different and interesting result regarding overall tax burden of rural sectors Inclusion of land tax would increase tax incidence in the rural sector in every expenditure group whereas inclusion of income tax to the tax burden of urban sector will only increase the burden of expenditure group with annual income of Rs 3600 and above Land tax together with indirect taxes will increase the burden of lower and middle income groups in rural area Income tax the burden of which is very high together with indirect taxes would increase the burden of higher income group in urban area as income tax is imposed only on high income Including land tax in rural area the overall tax burden of lower and middle income groups both rural and urban does not seem very significantly differeot But the overall tax burden of higher income group in urban areas is much higher than rural higher income groups It is only the very big farmers and Landlords who pay agricultural income tax the rate of which is not so steep as it is in the case of general income tax Agricultural income tax rate is not very high moreover higher income group in rural area avoid income tax due to the absence of proper accounting system in agriculture The rural higher income group are the owners of larger lands and they are possibly highly taxed Land tax paid by them is not progressive and the rate of tax is also fixed

It is estimated in recent years that 40 per cent of increased income in urban areas has been taxed away indirectly but it is only near about 14 per cent in rural area (*Economic Weekly Annual number 1959* article of K N Raj) Strictly speaking the agricultural share of this percentage is lower as the share of non agricultural rural people is likely to be higher than agricultural rural people During the period 1950-59 agricultural income recorded a rise by about 27 per cent but it has not been possible to tax away an appropriate share of this increased income According to the Summary Report of the Rural Credit Follow up Survey (1956-57) during the period 1955-57 agricultural people saved to the extent of Rs 195 crores — that is 3 9 per cent of the increased income (*Reserve Bank of India Bulletin* March 1960)

In our analysis of income, expenditure and the relative position of the agricultural sector in Indian economy and their tax burden compared to the urban sector in view of the recent increased agricultural income, we have tried to point out the possibilities of higher rates of agricultural taxation in India and to this, as it is very natural one might question why we are emphasising increased agricultural taxes when nearly 75 per cent of the agricultural households own less than 5 acres of land each and 70 per cent of rural households spend less than Rs 1 200 annually both the figures are good indicative of the poor condition of agricultural people To this perhaps the ready answer is that the poverty of the majority of any sector cannot justify the richness of the minority which goes unnoticed as this minority group in agricultural sector are enjoying higher income but they are going lightly taxed compared to people in comparable economic position in other sectors In the absence of suitable alternatives we think higher rate of land tax may be imposed on big landholders without delay We have also noticed that indirect tax contribution of this agricultural people is not adequate compared to their income due to relatively less flexible consumption pattern followed by even richer agricultural people in India Higher tax contribution by richer section of agricultural people is economically desirable

Higher and progressive rate of land tax seems justifiable on a number of grounds of which the increasing revenue need of the government is important and it is desirable that a large part of this revenue comes from taxation Considering the needs and practical possibilities we think the land tax rate should be made higher and progressive A substantial portion of national income of India is contributed by the agricultural sector and increased price level of agricultural commodities has increased the income of the agricultural sector considerably and specially the income of larger agriculturists who are the owners of larger lands Tax revenue in India now totals about 8 5 per cent of national income and the proportion of tax revenue to national income, according to the Third Plan proposal should go up to 11 per cent This is a minimum target and if this target of tax revenue is to be achieved higher contribution through land tax seems quite justifiable and in line with the national policy Higher and progressive rates of land tax is likely to reduce the present level of wide income disparity among the different groups of agriculturists Relative ineffectiveness of indirect taxes in rural area is also justifies the need for higher land tax

Justification for higher and progressive land tax seems to have a deeper root Present line of taxing power of the Centre and States in India is the outcome of Montagu Chelmsford Reforms Now taxing powers are separated by the constitution and the States have been practically forced to live mainly by taxing land and agricultural wealth keeping industrial wealth beyond the taxing power of States As a result of industrial development increasing wealth of country is not coming in the hands of States In bigger States of India the size of revenue from land forest and irrigation

quite large and there is potentiality for expansion in future. But in States where there is limited scope for expansion, higher land tax seems suitable to meet increasing needs of the State exchequers Financial responsibilities of States are increasing due to rapidly increasing developmental activities In such circumstances States can augment their resources by increasing the rate of land tax when other expanding sources are not in their hands

Demand for higher tax contribution from the agricultural sector is not quite new. In many countries of the world, developmental expenditures at the initial period were met mainly from increased contribution of agriculture. Extensive use of land tax in Japan and the U S A proved very productive during their stride for changing the economic base from an agricultural one to an industrial one (*Economic Development and Cultural Change*, Vol VIII, No 3 April, 1960, article of Richard Lindholm)

Saving of the rural people and income in the form of rent, interest and profit were largely mobilised through land tax for economic development In Japan industrial development was financed by "stiff taxation, specially of the agricultural population' (*Economic Development of Japan*, Lockwood) This "stiffness" will be shown in the following table

TABLE 6

EIGHT FISCAL PERIOD, DECEMBER, 1867—JUNE, 1875

TOTAL ORDINARY REVENUE 282 9 MILLION YEN

Land Tax	232 7 million	Yen
Custom	8 5 "	"
Other Taxes	17.2 "	"
Revenue from Govt Enterprises	6 8 "	"
Receipts of Loans	2 6 "	"
Revenue from Govt Property	6 4 "	"
Miscellaneous Revenue	8 7 "	"
Total	282 9 million	Yen

SOURCE "Capital Accumulation in Early Meiji Era", Chotaro Takahashi, *Asian Affairs*, Vol I, No 2, June 1956

The above table shows that during the period concerned land tax alone contributed 232 7 million yen of 282 9 million yen total ordinary revenue, this comes to say land tax contributed 82 3 per cent of total revenue Even in 1908 farmers contributed 28 per cent of their income to tax revenue while merchants and industrialists contributed 14 per cent of their income and this continued up to Second World War with little modification Thus in Japan agriculture was discriminated against, in matters of taxation, in favour of the industrial sector A comparison of the magnitude of land tax with an estimate of total investment will show that capital investment was perhaps about the order of 150 million yen as compared to 36 million yen revenue from land tax in 1906 07 Land tax amounted to 57 per cent of the total investment (Source "Agricultural Productivity and Economic Development in Japan", Bruce F Johnston, *Journal of Political Economy*, Vol LIX, Feb-Dec , 1951)

Russia and China take a good part of agricultural income by way of compulsory requisition of grain and by other methods Increased land tax would be nothing new and unreasonable in India

In our analysis we have tried to indicate the possibility of higher and progressive rate of land tax without delay but any suggestion for higher tax rate requires careful consideration about the size and productivity of land considered for higher land tax rate Land tax should be related to the size of holdings productivity of land and variations in grain prices Impact of higher rate of tax on the productivity and on the small farmers should receive special attention To our mind farmers with less than five acres of cultivable land should be regarded as small farmers though this should not be a rigid figure

We think higher and progressive rate of land tax is practicable in India because we know agricultural income has increased by several times in recent years and a large part of the income is enjoyed by big farmers Agricultural income per household can rise through higher yield per acre higher productivity per labour and through higher prices of agricultural commodities Labour productivity in agricultural and per acre yield have not recorded any significant rise in India in recent years though total production has been increased Rise in total production is largely due to extension of cultivation and favourable weather condition together with large investments in two plans The rise in agricultural income in recent years is mainly due to rise in prices of agricultural commodities Popularity of commercial crops is also responsible for higher agricultural income in recent years

This rising agricultural income has been followed by fixed land tax — the burden of which has been reduced due to increased price of agricultural commodities Land tax at present is hardly burdensome to those who pay it But in such generalisation we must remember that benefits of rising price level could be enjoyed only through sale of grains at higher prices Selling of grains is possible when farmers are producing something more than their requirements for family consumption It is only the farmers who are producing marketable surplus who are enjoying the fruits of higher price and their incomes have increased considerably

We have noticed three fourths of rural families own less than five acres of land each and production per acre and per labour has not appreciably changed excepting in places where land received special attention Therefore we can possibly say with a note of caution that change in income of the farmers in terms of grain (quantity) production is not very significant but income in terms of money value of grains has been increased by several times What has it brought to the lot of small farmers?

To quote the *Report of the Bengal Land Revenue Commission* (Vol I Majority Report 1938) Taking into account the various estimates which have been made a family's consumption of rice we believe that 30 maunds of rice or 45 maunds of paddy is sufficient to provide two

meals a day for the average family though many families may not be able to afford even 24 maunds of rice

During the period 1950-59 average yield of rice and wheat—two main foodgrains in India were about 10 maunds and 9 maunds (cleaned rice and wheat) respectively [1]

In the light of the findings of the Land Revenue Commission we find that full production of three acres of land is the essential minimum to provide a family's needs two meals a day There are other requirements of a farming family —capital expenditure and recurring cost of cultivation certain minimum amount of industrial goods To meet all these a farmer requires some additional income Besides that a farming family requires additional land for housing cattle-keeping grain clearing etc As there is no exemption limit of land revenue and general cost of living is higher a farmer should have more than three acres of land to ensure a just living To my mind five acres of land should be taken as the minimum need for an average family for a reasonable living

Income has not been appreciable through higher per acreage yield therefore income of the families holding less than five acres of land has not changed significantly in terms of grain production or in terms of basic requirements per family though money value of their produce is fairly high As we have pointed out that high income due to price rise is meaningful if the farmers can sell their produce in the market The farming families with less than five acres of land (including all) have not been able to increase their income in reality because they are not the sellers of larger amount of grains in the present market It is the big farmers with larger holdings who are sellers of surplus grains in the market and they realise higher income The larger the size of cultivation the larger will be the income through diversification of production and sale of large surplus at increased price The burden of fixed land tax has practically become no burden to these big farmers who are the sellers of surplus crops

In the case of agriculturists with less than five acres of land but producing commercial crops their income might be higher than those who are producing rice on similar plots but the percentage of this group is not high Moreover commercialisation of agriculture beyond a certain level is subject to qualitative and some technical limitations If their income is higher (at least by 50 per cent) than the income from cereal production a rise in the rate of land tax may well be considered to take away a portion of higher income

From the above arguments we can possibly conclude that in spite of rise in the price of goods and agricultural income as a whole the real income and tax paying capacity of small farmers have not increased materially A small rise in income if at all increased has been more than neutralised by higher cost of cultivation and rising cost of living

Source: *Area Production and Average Yield Per Acre of Principal Crops in India*—Issued by Economic and Statistical Adviser to the Govt of India Ministry of Food and Agriculture

and the burden of land tax is not light if not burdensome Therefore any rise in the rate of land tax would affect adversely the small farmers with less than five acres of land This is strikingly true in rice and wheat growing areas and the condition is perhaps worse in the case of farmers producing other inferior types of cereals

A distinction in respect of taxation between land producing cereals and land producing other cash crops seems justifiable in view of the fact that rise in price level of cash crops is much higher than rise in the price of foodgrains In the case of farmers using larger plots for the cultivation of commercial crops a higher tax rate or a surcharge over the basic land tax may well be considered But the rate should not be so high that it would sap the incentive for commercialisation of agriculture Higher rates of tax must take into consideration the possibilities of shift in cultivation at the margin Commercial crops not only provide raw materials for our growing industries but also constitute a vital part of our much desired export trade

To strike a balance between immediate increased revenue requirement and the existing income disparity in the agricultural sector there is scope for higher land tax for consideration

In view of our above discussion we think that a higher and progressive rate of land tax may be imposed in India The progressive rate should be based on the quantum of land held by individual landowners The amount of land tax per acre will vary from owner to owner according to the size of his holding In this new scheme we think there should be no increase in the rate of land tax (land revenue) paid by small owners with less than five acres of land In the case of landowners who possess more than five acres of land increased land tax at progressive rates should be imposed The size of holdings as the basis for progressive rate seems more suitable than income basis Land tax should be changed into a personal and progressive tax based on the quantum of lands held by persons Correct assessment of income in the agricultural sector is very difficult as there is no proper accounting system in Indian agriculture excepting in very few organised farms Large scale avoidance of tax is likely if we depend on income basis for tax A surcharge in addition to the new tax (land tax) rate may be imposed on big land holders — those who own more than 20 acres of cultivable land and are used for agricultural production Surcharge seems attractive from an administrative point of view as it does not require a new agency for collection or new expenditure for computation of income

There are two possible difficulties in the way of implementing the new land tax rate as suggested in the previous paragraph The first is that the increased rate might give some psychological shock to the landowners and this in its turn may give rise to some adverse political situation in the rural area of our country The present government possibly will not be prepared to swallow any political change in rural areas which may ultimately take the present government to its grave But for the greater

interest of the country, the government must be prepared to take a bold step in favour of higher agricultural tax rate. The government should also realise the simple truth that one cannot satisfy someone by granting continuous concession at the cost of greater ultimate end.

The second defect is really important and economic in nature Suggested increased and progressive rate of land tax might encourage subdivision of land to evade higher rate and surcharges We think the problem will not be of very *serious magnitude* as the policy of dividing big holdings into small has already been followed at a greater scale when land reform bills were in the offing in State legislatures If this problem seems to baffle the purpose of higher and progressive land tax, some legal measures may be taken against such division of holdings and considering the greater interest of the country no such legal measures would be wholly unjustifiable

In the case of large holdings used for commercial crop production, a surcharge in addition to the new land tax rate is well worth considering A 25 per cent rise in income due to cash crops over the income from cereal production may be neglected In the case of income exceeding by more than 25 to 30 per cent a surcharge over the land tax may be considered Due weightage should be given to different types of commercial crops and exemption limit (for imposition of surcharge) should be adjusted to the varying conditions of different types of commercial crops

Lands utilised for profitable production other than agriculture are also earning higher incomes due to general rise in price level Land tax rates for such lands should be adjusted to the increased income In India, especially in rural areas, great prestige value is attached to larger land holdings and lower rate of land tax accentuating concentration of lands In many cases lands (cultivable) are kept idle or utilised in unproductive ways and wastage of land is not uncommon Idle lands or lands utilised for purposes other than productive purposes should be taxed at penalty rate This high rate will discourage the inefficient use of land and reduce social disparity in landholdings

If a higher and progressive rate of land tax is imposed, as suggested in this paper, the contribution of present "land revenue" will rise to relieve the State governments in times of present financial crisis Moreover, the principle of equity and progressiveness, so far lacking, would be introduced in the system of land tax to some extent Income disparity in agricultural people will be reduced and surplus income, so far idly kept or not fruitfully utilised by the agricultural people, would be in the hands of the government for investment for the benefit of the country as a whole including agriculture At present "land revenue" is inelastic and not responsive to change in production and prices of agricultural commodities It is only serving the purpose of supplying relatively fixed revenues to the State exchequers A change in the rate of revenue will serve not only revenue purposes but also the simple tax principles and tax may be made responsive to changes in the economic situation — the essential feature of the tax policy of a dynamic economy.

Implications of Labour Productivity in Undeveloped Countries

AT THE very outset it is necessary to bear in mind that the purpose of the present paper is two fold In the first place it seeks to facilitate both understanding and discussion on the crucial problem of labour productivity including a bit of conceptual elaboration and analysis particularly in the context of underdeveloped economies Secondly it attempts to make a brief study of productivity in relation to certain known labour problems and their commonly suggested remedies Throughout our discussion on productivity and its related aspects the Indian industrial scene will however be kept at the forefront

I

It would perhaps not be an undue exaggeration to say that very few words have assumed great significance and importance particularly in the context of post war economic development of a country than the word productivity Although the terminology is not of very recent origin for the Western countries notably the U K and the U S A are long in the field its inherent appeal to the backward and stagnant economies can be traced back to the days immediately following the Second World War The uphill task of reconstruction and rehabilitation of war torn economies of the backward nations of necessity warranted not only systematic mobilisation and careful utilisation of resources for the purpose of planned development but also basic policy prescriptions as to how the pace of development could be made rapid enough consistent with the peoples aspirations In more senses than one an universal eagerness to forge ahead in the path of socio economic progress was unmistakably in evidence everywhere In the wake of this revolution of rising expectations to quote the late U N Secretary General Mr Hammarskjoeld the theme behind productivity has been rather quick to catch the imagination of planners in underdeveloped countries

In the contemporary economic literature low industrial productivity has been characterised as one of the major symptoms of underdevelopment and economic backwardness There is now a wide agreement among economists that the crucial problem in the underdeveloped regions of the world centres round the question of raising real income of the people and the means of achieving it within the shortest possible time Dealing with Latin American countries a recent I L O publication points out that

'one of the most urgent aspects of the economic and social development of Latin America is the need to improve the real incomes of the poorest sections of the wage earning population'.[1] Improvement on the productivity front, it is argued, can go a long way to obtain the desired results in this direction But unfortunately the concept of productivity embraces within its fold at once so much and so little meaning that it becomes a perplexing task to arrive at a generally accepted notion Thus while the term "productivity is not always susceptible of a clear cut interpretation its real significance can be somewhat easily understood in the broader context of economic development of an underdeveloped country

While a combination of political, social and cultural circumstances of a country have much to do either to accelerate or to inhibit its economic development, the chief barriers to economic development in a dynamic sense appear to be a cultural environment that is inhospitable to change, that lacks entrepreneurs, that does not generate innovations within or borrow them from without, that makes use of far too little specialisation for high productivity".[2]

There is a firm belief in some quarters, no matter how far warranted by empirical evidence, that in real terms higher labour productivity flows from greater technological progress in general and accordingly technological innovations are regarded as indispensable pre requisites for an overall increase in productivity Domar however, makes the perspective clear when he observes that labour productivity is not a function of technological progress in the abstract but technological progress embodied in capital goods, and the amount of capital goods in general [3] He goes on to emphasise that at least to a certain point it is possible to secure an increase in labour productivity as a result of capital accumulation even with no technological progress This happens in two ways Firstly, more capital per workman is employed in each industry and secondly, labour tends to shift to industries using more capital and paying higher wages Granted therefore, that labour productivity is affected by capital accumulation, the formula that the latter should proceed at the same rate as the former (as the increase in labour force) is not as helpful as it appears [4] This aspect of the problem is little understood in underdeveloped countries where planners in general seem to labour with the idea that a given rise in labour productivity is most likely to bring about an identical increase in the rate of capital accumulation As a matter of fact, capital accumulation and consequent economic development involves many dimensions although according to Reder, "accumulation of (inanimate) instruments of production (capital goods) is, of itself, an indicator of economic progress".[5] Characterising

[1] I L O (Geneva), *Minimum Wages in Latin America* 1954 p 3
[2] Buchanan, N S and Ellis H S *Approaches to Economic Development*, 1955, p 409
[3] Domar, E D, *Essays in the Theory of Economic Growth* p 73
[4] Domar E D, *op cit*, p 73
[5] Reder, M W, *Labour in a Growing Economy*, p 16

per capita output as an index of development Leibenstein writes that development implies the enhancement of an economy's power to produce goods and services per capita for such enhancement is the prerequisite to raising levels of living [4]

Let us now deal in a more analytical vein the factors on which industrial productivity in general depends To be precise a multiplicity of factors govern the rise or fall in industrial productivity A contemporary writer observes that the factors affecting industrial productivity are so numerous complex and inextricably interwoven that the task of evaluating the influence of each individual factor on the overall productivity of individual units is beset with almost insuperable difficulties [5] And due to their enormous complexity and inter related character difficulties also crop up in regard to their arrangement into any logical or systematic sequence Indeed Prof Balakrishna's description of productivity as an elusive concept that does not lend itself either to a clear cut definition or to easy computation [6] would seem to be very real Nevertheless a broad classification of these factors is possible into technical managerial financial entrepreneurial and general or special in order to facilitate analysis and interpretation Aside from the fact that the productive potential of these complex factors poses difficult problems of measurement yet there is now almost a general agreement at least in knowledgeable quarters that productivity indices could serve as powerful tools of economic analysis as valuable yard stick for measuring the magnitude of economic changes as a useful barometer for forecasting the economic conditions and prospects and as a bench mark for evaluating the economic progress of the country [7] In a very realistic sense labour productivity in a particular country could also easily have serious repercussions on the general level of living of its people Melman rightly observes that the level of labour productivity has far reaching effects For the output of goods in relation to the input of production man hours limits the possible supply of goods per person and thereby affects virtually every aspect of living" [8] In view of considerable measure of empirical research in Western countries particularly the U K and the U S A it is not unrealistic to visualise that productivity or the ratio of output to the corresponding input of labour to use most widely accepted definition is now capable of statistical r ment in spite of many complexities and limitations It must, he recognised particularly in the context of underdeveloped c higher productivity is not an end in itself but means of p progress and strengthening the economic foundations being it leads eventually to lightening the burden of

[4] Leibenstein H *Economic Backwardness and Economic Grow*
Mehta M M *Measurement of Industrial Productivity* 1955 Ch.
[5] Balakrishna R *Measurement of Productivity in Indian Industry* A
Chap I p 1
[6] Mehta M M *op cit* Chap I p 10
[7] Melman Seymour *Dynamic Factors in Industrial Productivity* Chap I p

ing the burden of machines making men work more humanely and the machines more inhumanely [11]

Productivity measurements serve as valuable tools for social and economic analysis and not infrequently are taken as the basis for governmental policies and business decisions The economic importance of productivity measurement lies in the fact as Prof Balakrishna says that differences in productivity as between two periods indicate broad changes in economic well being as the real income of the people would vary with changes in productivity [12]

India is on the threshold of an industrial revolution and through her industry oriented Five Year Plans she is aspiring for rapid industrialisation in order to catch up with the industrially advanced nations of the world although being basically an underdeveloped country, there is hardly any apparent consciousness that in her pursuit she is running an unequal race

There is no denying the fact that broadly speaking the average productivity of the industrial workers in India is abnormally low while compared to the industrially advanced countries It must be noted here that absence of a general index of labours economic efficiency greatly restricts the possibility of making effective comparisons between countries in this particular field In such a situation as Messrs Buchanan and Ellis point out "one can only infer probable efficiency from certain collateral facts which *a priori* seem to be associated with efficiency" [13]

It is disquieting to note that the average Indian employers until recently have never been serious enough to create the necessary conditions in their enterprises under which the productivity of workers will improve Even today various Chambers of Commerce and Trade Associations in India hardly attempt to do anything concrete in this direction except to forcefully put forward the traditional stand of the employers against any wage increase not followed by increased productivity On the other hand trade union organisations are yet to assess the matter in its real perspective and naturally they are more or less reluctant to extend their helping hand for the cause of higher productivity Thus while there is an abundance of precepts positive actions are conspicuous by their absence Not that the government is doing everything expected or it but there is nevertheless genuine willingness particularly in the context of planning to help the cause and a real beginning under government auspices has already been made with the establishment of the National Productivity Council in the country Of late the National Productivity Council is expanding its activities through the opening up of several Local Productivity Councils in selected regions although the coverage is still insignificant

It should be noted here that Indian productivity literature is rather

[11] N P C (India) *Speaking of Productivity (a monograph)* p 1
[12] Balakrishna R *op cit* Chap I p 13
[13] Buchanan N S and Ellis H S *op cit* p 29

scanty [1] and not enough research on this subject has been done in India till the present time This highlights the need for research in this field and if properly carried out surely immense good will be done to our overall programmes of industrialisation Mention should be made of the *Report of the Indian Productivity Delegation to Japan* (published by the Ministry of Commerce and Industry Govt of India) which is also a valuable document Recommendations although not all contained in this report are *now in the process of implementation*

In India official figures concerning productivity of the workers employed in different industries are not systematically available Among the major Indian industries the *Indian Labour Journal* (published monthly by the Govt of India Ministry of Labour and Employment) contains productivity figures relating to the workers employed in coal mines only Table 1 will exhibit the broad trend of the productivity of the workers in coal mines especially during the plan periods It will be seen that the productivity of all the three categories of workers has shown a rising trend since 1953 with minor exceptions in the years 1955 and 1958 when significant declines are noticed in respect of the workers included under column 3 of the table During the last phase of the Second Plan i e in the years 1958 and 1959 the productivity of the workers under two categories (columns 2 and 4) has remained static This does not however present an encouraging picture especially when the productivity campaign in the country as claimed by the government is making considerable headway

TABLE 1
PRODUCTIVITY OF WORKERS EMPLOYED IN COAL MINES

Year	Output (in tons) per man-shift for		
	Miners and Loaders	All persons employed underground and in open workings	All persons employed above and under ground
(1)	(2)	(3)	(4)
1953 (Average)	1 05	0 57	0.35
1954 ( )	1 09	0.58	0 37
1955 ( )	1 10	0.54	0 37
1956 ( )	1 12	0.59	0 38
1957 ( )	1 14	0 61	0 41
1958 ( )	1 15	0.59	0 42
1959 ( )	1 15	0 62	0 42

SOURCE *Indian Labour Journal* June 1960 Table 13 p 6[***]

A study of the changes in the productivity and earnings in certain Indian industries was undertaken in the recent past by the Government of

[1] Two standard works of value could be cited viz (1) Balakrishna R *Measurement of Productivity in Indian Industry* Madras University Economics Series No 8 (2) Mehta M M *Measurement of Industrial Productivity* The World Press Ltd Calcutta 1956

India The results of this study were published in 1955 The study revealed the following facts [15]

(i) in the coal mining industry, the overall rate of increase in productivity for miners and loaders during the period 1951 to 1954 was 0 76 per month as against 0.26 in the average weekly cash earnings
(ii) in the paper industry the average earnings of workers increased during the period 1948-53 but there was no evidence of an increase in productivity
(iii) in the jute textile industry the rate of increase in productivity during the period 1948 to 1953 was 2 9 per year as against 3 7 in earnings and
(iv) in the case of the cotton textile industry the annual rate of increase in productivity during the period 1948 to 1953 was 2 28 as against 1 14 in earnings

It is also gratifying to note that in view of the general inadequacy of productivity statistics in India a project for the compilation of interim productivity indices based mainly on the annual census of manufacturers for nine selected industries viz. jute textiles iron and steel sugar cotton textiles glass cement paper matches and woolen textiles has recently been taken up by the Labour Bureau Taking 1947 as base the annual indices are proposed to be compiled from 1948 to 1956

II

It is often said perhaps not without reason that trade unions have a distinct role to accelerate the forward movement of a country on the road to industrial progress The patent fact in this respect can hardly be overlooked that trade unionism in underdeveloped countries usually suffers from a number of drawbacks In brief these relate to inadequate union-consciousness of labour low level of living weak collective bargaining powers insufficient social security measures absence of any scientific system of workers education immature economic outlook and last but not the least low level of productive efficiency All these things greatly retard the growth of healthy trade unionism

In the modern industrial system labour unions undoubtedly play a dominant role While the industrially advanced countries have recognised in unmistakable terms the role of labour unions as a suitable agency for collective bargaining the underdeveloped countries are yet to establish firmly a healthy practice of the same In India the official labour policy as conceived under the Five Year Plans is directed towards the ultimate objective of fostering healthy trade unionism and a sound system of collective bargaining

In order to clear up any possible confusion it is at first necessary to

[15] See *India 1960—A Reference Annual* published by the Govt of India p 377

visualise the real function of a trade union The trade unions are essentially economic organisations even though their activities at times come very near to touch non economic aspects Unlike typical business enterprises they do not behave economically keeping in view a maximisation principle To take a realistic view a trade union is a regulatory body engaged in determining the minimum standards under which production may continue and is perhaps more nearly comparable to a Government agency than to a business concern [8] Still it has long been a practice although an erroneous one to denounce the unions as monopolies on the ground that they direct their efforts to eliminate competition between the members But a trade union is not involved in normal *buying and selling of the commodity it controls* A very apt description of a trade union would be labour cartel which enjoys the power to fix wages and other conditions on which its individual members are allowed to sell their services to the individual employers But as Ford observes it cannot *destroy men in order to maintain their value as monopolies* have sometimes destroyed surplus stocks [9] For obvious reasons a trade union's real aim lies in ensuring the maximum amount of work at the standard rate and if we may say so to that extent their action conforms to maximisation principle In advanced countries the unions today are to meet the organised resistance of the employers whereas monopolies have often the advantage of meeting unorganised consumers The conclusion reached by McGregor and Wieser that if unions were monopolies they were a weak variety [10] is therefore perfectly warranted

Two distinct functions of a trade union movement have been indicated by Prof Galenson when he says that every trade union movement looks two ways on the one hand a union represents the interests of its members as consumers It does this by seeking higher wages and fringe benefits But it is less well understood that unions are integral parts of the productive mechanism [11] Dwelling largely on the political aspects of unionism Prof Galenson mentions another interesting role of a modern trade union thus by acting as a buffer between the worker and government the union can help prevent the undermining of confidence in a regime which purports to advance consumer interests but fails to do so [12] This is particularly relevant to newly independent underdeveloped countries where political instability and social chaos often make their ugly appearance and act as serious impediments to orderly economic progress which is so very essential for successful planning

It would therefore appear that the powers of trade unions either to

[8] Reynolds G L See his essay entitled "The Impact of Collective Bargaining on the Wage Structure in the United States" in *Theory of Wage Determination* (Ed by J T Dunlop) p 196

[9] Ford P., *The Economics of Collective Bargaining* 1958 Chap II p 38

[10] McGregor D H *Industrial Combination* 1906, Pt II Chap III Wieser F Von, *Social Economy* (Translated by A F Hinrichs) 1927 pp 375 78. Quoted by P Ford, *op cit* p 38

[11] Galenson, Walter See his introduction in *Labour and Economic Development* (Ed by Galenson) p 12

[12] Galenson Walter *op cit* p 17

raise or lower labour productivity are clearly circumscribed by some obvious limitations If a labour union is successful in concluding a collective agreement and is thus able to secure a wage increase for its members there seems to be no guarantee that it will be equally successful in boosting up labour productivity in a proportionate measure even when there is genuine willingness to do so On the other hand it is also easy to visualise the improbability of the proposition especially in the context of capital poor backward countries that the employers however unorganised and inferior in bargaining strength would not insist on higher labour productivity as a condition precedent for the conclusion of a collective agreement The conclusion is perhaps inescapable that in the present state of unionism obtaining in underdeveloped countries labour unions by merely manoeuvering their policies and actions could hardly be able to achieve significant success in productivity increase if they are called upon to do so It however stands to reason if we say that labour productivity in these countries will automatically register substantial improvement when there would be a wide net work of workers education and an elaborate system of social security And taking into account the poor resource position of these countries the process would inevitably be a slow and gradual one

In underdeveloped countries it is not always clearly understood that scarcity of skill and technical knowledge is more directly patent than the scarcity of capital [21] Indeed inadequate skill formation is one of the contributory factors to low level of labour productivity in these countries although in the words of Prof Galenson the skill factor appears to be a transitory problem at worst and not a very stubborn one at that once economic development gets under way The theory of the economy of high wages does seem to have a real basis in fact [22] The example of the West Indian farm worker who got himself quickly transformed into a qualified and efficient factory hand when offered employment at wages sufficient to banish malnutrition and to provide decent housing has been cited in this connection [2] Doubtless the productivity of workers will increase substantially under such circumstances Viewed in this context the current Indian emphasis on labour intensive methods of production would appear to be ill conceived at least on theoretical grounds

In any case the theory of the economy of high wages in spite of its inherent soundness (as illustrated above) comes into direct conflict with the employment and social policies of most of the capital poor underdeveloped countries where a large volume of both unemployment and underemployment greatly intensifies the overall problems of economic development For obvious reasons this is more so particularly for countries which have accepted democracy as their political code and

[1] Datta Bhabatosh *The Economics of Industrialisation* 2nd Ed Chap XI p 200
[2] Galenson Walter *op cit* p 4
[3] Galenson Walter *op cit* p 4

have shaken off purely socialistic system of planning Due to an abnormal rise in population and consequent augmentation of the number of fresh entrants in the labour force (known symptoms of underdevelopment these countries are more or less obliged to attach great emphasis to employment aspect of their economies Looking at our own economy, it is no exaggeration to say, as a recent I L O publication observes that the evolution of the wage earning class in India has been the inevitable *consequence of the country's industrial development, assisted considera* bly by the increase in population [24] Keeping these problems in view and realising the gravity of unemployment in the country the Indian Planning Commission has made it clear that full employment is both the object and the consequence of economic development [25]

As stated earlier in quest of rapid economic progress underdeveloped countries in particular nowadays put great reliance on technological advancement which is undoubtedly at a low level If contemporary events are any guide science and technology have opened up vast possi bilities for the production of material wealth but it has at the same time, greatly enhanced the chances of higher social costs—a fact often overlooked or not seriously heeded to by the underdeveloped countries Thus emphasising the imperative need of social services in the context of economic development through technological improvements a writer observes that technology's trump card is production of material goods for and by the masses but it works in a vacuum unless constructive social services see to it that the individual is not lost in the mass A life of peace and plenty demands that there be an adequate balance between production of material goods and the flow of social services [26] In the existing Indian conditions this much needed balance is yet to be achieved In fact a lack of balance between industrial investment and the investment in social services (in the public sector) particularly during the Five Year Plans is clearly noticeable from the following table

TABLE 2

(*figures in crores of rupees*)

Plans	*Total investment (public sector)*	*Total investment (public sector) in Industries and Minerals*	*Per cent of 1 to 2*	*Total investment in Social Services (Public Sector)*	*Per cent of 1 to 4*
	(1)	(2)	(3)	(4)	(5)
First Plan	2 378	188	7 9	532	22 4
Second Plan	3 800	790	20 7	455	11 9
Third Plan (Draft)	6 200	1 660	26 7	650	10 4

SOURCE Indian Five Year Plans

[24] I L O (India Branch New Delhi) See Industrial Wages in India in *Recent Developments in Certain Aspects of Indian Economy III* p 55

[25] Planning Commission See *Draft Outline of the Third Plan* Chap V p 83

[26] Dastur H P See his article entitled Management Philosophy—its Medical Aspects in *Indian Labour Journal* June 1960 p 562

The above table (see above) will reveal a lack of proportion between investment in industries etc and investment in social services In the First Plan allocation for social services was significantly huge while compared to industries In the Second Plan with its marked emphasis on rapid industrialisation the proportion of allocations almost reversed showing three fold increase in industrial investment and a steep decline (about 50 per cent) in social services investment Again in the Draft Third Plan one finds that while the investment in industries has been stepped up as much as 6 per cent over the Second Plan allocation (in order to keep up the tempo of industrial development) the investment in social services has been slashed by 15 per cent

While disproportionately greater allocation on social services in the First Plan is understandable in view of the corrections sought to be achieved in the country's economic imbalance and the initiation of a process of socio economic growth the allocations on this head in the subsequent two plans do not exhibit a balanced emphasis

The advancing pace of industrialisation of an underdeveloped country like India inevitably brings in its wake greater and greater social problems necessitating higher allocation on social services A comparison of allocations under the respective heads i e industries and social services will indicate that with the increase in industrial investment the social services instead of keeping pace with it are actually showing a declining trend *This imbalance does not augur well for the welfare of* labour which has a direct bearing on increased productivity As new industries develop fresh employment opportunities are created but *reduced quantum of social services will only have the effect of reducing* the per capita benefit to the workers even from the existing level

One of the baffling problems that confront both the public and the private sectors of the Indian industrial economy is the persistent clamour of the labour for higher wages on the one hand and the equally forceful resistance by the management on the other Indeed this bone of contention between labour and management is one of the major economic ills that largely contributes to the contemporary unhealthy economic scene and retards orderly industrial advance and consequently economic growth

The situation when analysed carefully would really appear to be a bit complex for prima facie a sound system of labour management relations alone can hardly be able to cure the malady Taking the labour's viewpoint it is difficult to deny their demand for higher wages when the prices of all the essential commodities for consumption have registered an upward trend over years May be that with the increasing tempo of industrialisation money wages have somewhat increased in the recent years but the fact remains that there has been no appreciable increase in real wages Inability of the government to hold the price line may be a contributing factor in this regard but the general plight of the working

class remains there with all its reality Similarly, the employers case is also understandable in view of the fact that the production cost will receive an unwarranted upward push in case an increase of wages is allowed without any commensurate increase in productivity In fact, none can possibly deny that cost of operations are continuing considera tions for industrial managements Labour costs and machinery costs are important elements in total industrial costs [27] It often happens that in a productive process obsessed with low productivity the employers would afford though reluctantly to precipitate unnecessary industrial disputes *rather than to embark on a programme of permanent increase in their* production costs which might ultimately tell upon the profit earning capacity of an otherwise successful enterprise

A gap therefore clearly exists in the field of labour management rela tions in the contemporary Indian economic scene which would seem un bridgeable at least at first sight The overall situation, in more senses than one is highly problematic and the dilemma of low output and high wages has become a matter of serious concern for economic planners

One interesting aspect of the productivity movement should be noted here Underdeveloped countries are readily fascinated by the fact that if the productivity of labour is raised to a particular level the ills stem ming from unhappy industrial relations will automatically fizzle out and that there would consequently be less impediments to the path and pro gress of industrialisation This great reliance on the productivity of labour however is not as sound as it is often supposed The remark of Prof Van D Kennedy in this connection is of particular relevance Citing the example of the U S A which has witnessed rising producti vity *for over 100 years multiplying real incomes several fold* Prof Kennedy observes in a recent article that industrialised economies have never relied on increased physical effort by workers for economic growth The universal result of industrialisation has been to reduce the hours of work and the amount of physical effort for each individual Gains in productivity have been achieved by the standard means of economic growth use of mechanical power mechanisation of production proces ses continuing innovation and improved management [28] Prof Calenson also speaks more or less in the same vein when he says that "absenteeism and slack discipline in the factory appear to be more a function of poor management than of any inherent characteristics of the labour force [29] We are therefore driven to the disquieting conclusion that the lately launched productivity campaign in India may not be able to bring gains *required for her economic development commensurate with the expendi* tures and efforts on this front This is however not to say that the rising level of productivity in India if it occurs would be entirely fruit

[27] Melman Seymour *op cit* Chap VIII p 58
[28] Kennedy Van D See his article entitled Labour and Indian Development in *United Asia* Special Number on Labour in Asia 1960 Bombay p 221
[29] Galenson Walter *op cit* p 3

less What is of significance here is that the incidence of expenditures in this regard may not be proportionate to the benefits achieved, and granted this, the all-out Indian efforts to raise labour productivity by all conceivable means would surely need a good deal of revision or reorientation In this respect, schemes like TWI (Training Within Industry) and Workers education would perhaps yield better results.

It has been a popular contention in almost all underdeveloped countries that a high incidence of industrial conflict contributes directly to the loss of valuable man days with consequent loss of production The general belief is that if industrial conflicts which offer a more less formidable challenge to orderly and speedy industrial progress could be reduced to a minimum or eliminated altogether the productive potential of the country could be more successfully harnessed to the overall needs of rapid economic development And as a remedy technological improvements in the process of production are suggested dwelling on the experiences of the Western countries But the problem has its underlying psychological aspects as well which could hardly be ignored Contemporary research on the problems of industrial peace would indicate that the manipulation of the economic and technological variables without consideration of the psychological consequences may very well lead to an increase rather than a decrease in conflict."[39] This pinpoints the need of psychological research which, unfortunately, is conspicuous by its absence in underdeveloped countries

The following table (see Table 3) will indicate the trend of industrial disputes in India during the two plan periods It is significant to note that fluctuation in the number of disputes does not necessarily mean a similar and corresponding fluctuation in the number of man-days lost Looking at the relevant figures one is discouraged to find that the First Plan has signally failed to lessen both the number of disputes and the number of lost man-days The overall picture in 1955 is grimmer than what it was at the beginning of the First Plan period Steady increase in the number of industrial disputes is also noticeable during the Second Plan period It is interesting to note that although the years 1958 and 1959 show almost identical number of disputes the loss of man-days in 1959 has shown a marked decline This improvement is presumably due to the establishment of a code of discipline in industry and similar other measures lately launched

[39] Stagner Ross, *Psychology of Industrial Conflict*, Chap XV, p 478

TABLE 3

INDUSTRIAL DISPUTES RESULTING IN WORK STOPPAGES INVOLVING TEN WORKERS OR MORE (BY YEARS)

Year	*No of disputes in progress during a part or whole of the period*	*No of workers involved directly or indirectly in disputes in progress during a part or whole of the period*	*Total No of man-days lost during the period*
1950	814	7,19,833	1,28,06,704
1951	1,071	6 91,321	38,18,928
1952	963	8,09,242	33,36,961
1953	772	4 66 607	33,82,608
1954	840	4,77,138	33,72 630
1955	1,166	5,27,767	56,97,848
1956	1,203	7,15,130	69,92,040
1957	1,248	6,40,871	49,82,229
1957*	1,630	8,89,371	64 29,319
1958*	1,524	9,28,566	77,97,585
1959*	1,523	6,92 514	56,05,079

*Figures relate to all States and Centrally Administered Areas as after reorganisation
SOURCE *Indian Labour Journal*, June, 1960, Table 14, p 678

For the underdeveloped countries lately in the field of industrialisation the lure of introduction of incentive payment systems as a means to boost up productive efficiency of workers is rather irresistable It is considered that if incentive payments result in substantial increase in the index of industrial production the cost involved in such a scheme will be more than compensated

To understand the exact function of incentive payment systems we may conveniently quote Marriott, the function of incentive payment systems is to increase or maintain some already initiated activity or they may be used to encourage some new form of activity, but, as applied, they often have a deterrent effect which impedes the behaviour desired [31] In spite of the acknowledged efficacy of the system of incentive payments this method of remuneration has not yet been able to achieve substantial results Recent researches undertaken in Great Britain and other Western countries in the fields of psychology and economics have established that the variables involved in the process are "so numerous that the direct effect of the incentive has proved elusive and rarely measurable' [32]

Thus we find that while the theoretical undertone of incentive payment systems is impressive its practical efficacy may not be quite commensurate with the cost involved Experiments and researches in the field though not inconsiderable have failed to set a standard acceptable under general circumstances In fact the results of research are yet to be crystalised into a systematic pattern designed to be of value for policy

[31] Marriott R, *Incentive Payment Systems* 1957 Chap I, p 26
[32] Marriott, R *op cit*, p 21

decisions There is indeed much substance in the observation of Marriott that the structure of incentive payment systems, the methods of introducing them the *difficulties of administering them* and the results achieved by them have been among the causes of much frustration to both employers and workers in industry [33]

It is relevant to note here that the Hindusthan Machine Tools in Bangalore is the first public sector industry in India where a scheme of incentive bonus directly linked with productivity was introduced as an experimental measure The scheme had the workers approval and was also successfully operative for about a year and then it broke down warranting further consideration by the parties concerned The scheme is now in abeyance The precise reasons behind the collapse of the scheme are not known except the fact that the scheme could not be continued due to *divergence of opinion* between the workers and the management developing at a later stage, In any case since inception the production record of this public enterprise is indeed spectacular Whether the record increase in production (as claimed by the government) is the result of incentive bonus scheme or due to some other factors may therefore constitute a fruitful line of investigation Whatever may be the reasons the economic implications of incentive payment systems are so varied and complex that it may well form the subject matter of a separate study

A discussion on incentive payment schemes would remain incomplete without a reference to the much publicised system of payment by results According to an I L O publication the chief advantage of payment by results is that when well designed and properly applied it can generally be relied upon to yield increased output lower costs of production and higher earnings for the workers [34] The same I L O publication lists a number of general principles concerning the application of the system of payment by results [35] The most vital among the principles is that before embarking on such a system it should be ensured that good relations already *exist between the employers and the workers*

Thus payment by results as a form of incentive wage system has serious limitations for wide application in underdeveloped countries in particular where ideal industrial relations are more an exception than a rule The efficacy of payment by results could only be noticeable when good industrial relations exist as a pre-condition and the system can hardly be regarded as a method to foster good industrial relations And yet there is evidence to show that *in Asian countries* the system has proved successful in a number of cases In particular Ceylon India and Pakistan have witnessed favourable effects on productivity and production as a result of the introduction of the system of payment by results A stumbling block however comes from the limited wants of the Asian workers

[33] Marriott R *op cit* Chap I p 25
[34] I L O (Geneva) *Payment by Results* Chap VI p 150
[35] I L O (Geneva) *op cit* Chap VIII pp 176-83

in general and their consequent indifference to respond to higher financial incentives for raising their effort or output and in such cases incentive system of remuneration would clearly be ineffective [36] It has also been observed that if higher payment as a reward for harder work leads to a higher degree of labour turnover it may even be disadvantageous [37] This is due to the fact that a large number of wage earners in Asian countries are only part time workers and that they take to seasonal migration as a rule

The basic characteristics of Indian labour both industrial and agricultural should therefore undergo radical transformation before incentive system of remuneration could be expected to have any appreciable effect on the general level of productivity It would be an unsound proposition to take isolated instances in some private sector industries for the purpose of generalisation and to frame national policy on that basis In view of the expanding public sector in India which is the declared objective of the government it would seem all the more desirable that experiments and their results in the public sector should be valued more as guides to policy

[36] I L O (Geneva) *Problems of Wage Policy in Asian Countries* Chap V p 125
[37] I L O (Geneva) *op cit* Chap V p 125

BINAYENDU NARAYAN MUKHERJEE

Labour Productivity in the Iron and Steel Industry in India

THE PAPER attempts a study of changes in labour productivity and factor proportions in the iron and steel industry in India. Till recently there were only three main basic iron and steel producing units in this country — the Tata Iron & Steel Co., the Indian Iron & Steel Co., and the Mysore Iron & Steen Works. Of these three the first two are the important ones and belong to the private sector and the third one — a State enterprise — is of minor importance and produces a small portion of the total output of the country's iron and steel. The Tata Iron & Steel Co. is however the only firm which started as an integrated iron and steel producing firm since its origin in 1907. The Indian Iron & Steel Co. emerged out as an integrated firm only in 1953 as a result of the amalgamation of two firms — the Indian Iron & Steel Co., a pig iron producing concern and the Steel Corporation of Bengal, a steel producing concern which produced steel from pig iron produced by the former. Therefore the Tata Iron & Steel Co. is the only firm on whose past records can be based a long range study of the various aspects of the growth of the iron and steel industry in India. Moreover comprehensive data as regards men employed, average attendance per day etc. which are essential for the study of the problem in hand were available in regard to the Tata Iron & Steel Co. only. Therefore this study has been mainly based on the materials available in regard to the Tata Iron & Steel Co.

It is felt necessary to state briefly at the outset what is actually meant by labour productivity. In this regard it should be borne in mind that "labour productivity indexes do not reveal changes in the intrinsic efficiency of labour but rather the changing effectiveness with which labour is utilised with other factors."[1] Therefore changes in the ratio of output to labour i.e. labour productivity have no definite significance. These changes may mean overall changes in factor proportions or kinds of capital equipments used. And it is against the background of all these possible changes that the changes in labour productivity should be viewed.

In calculating labour productivity for the iron and steel industry in India both average number of men per day on roll and average attendance per day data for the TISCO are available. The figures of average attendance per day, however, have been used to find out output per unit of

[1] Segel, J. H., *Concepts and Measurement of Productivity*, 1953, p. 21.

labour. First, let us briefly examine the attendance figures. Looking at the attendance figures in Table 1 one can see that there is variation in the attendance percentage per day in different years.

The attendance percentage was the highest in 1935 36 and the lowest in 1946-47. During the period between 1935-36 and 1940-41, the average attendance was 78 4 per cent. In 1941-42 and 1942-43 the percentage dropped to about 76 3 due to the war scare and the political disturbance in August 1942 respectively. The percentage of attendance then improved till 1945-46 Again, since 1946-47 the percentage of attendance declined till 1950-51, the average during this period being 75 19 per cent. The *decline is partly attributed to the introduction of four compulsory offs* in a month from the 1st January 1946 Previously there was only two

TABLE 1

ATTENDANCE OF MEN ON ROLL IN THE TATA IRON & STEEL CO

*Year	*Attendance of men on roll average per day*	*Expressed as percentage of men on roll*
1935	18,155	79 4
1936	16,355	78 7
1937	19,068	77 7
1938	19,477	78 4
1939	20,256	76.3
1940	21,335	78 1
1941	23,028	76.3
1942	24,476	76.3
1943	25,102	76 7
1944	23,615	77 4
1945	23,085	77 4
1946	23,178	74.3
1947	23,531	75 0
1948	24,219	75 6
1949	23,563	75.2
1950	23,080	75 9
1951	23,164	76 7
1952	23,471	76.5
1953	23,728	77 0
1954	23 019	76 4

* From 1st April of the given year to the 31st March of the next year
SOURCE: Mimeographed copy of a talk given by the General Superintendent of the Tata Iron & Steel Co Ltd., 1956

compulsory offs in a month. Since 1951-52 the attendance percentage improved mainly due to the introduction of incentive bonus scheme superimposed on performance bonus schemes The average attendance during the period 1951-52 to 1954-55 was 76 7 per cent.

Let us now look at the movement in the productivity figures

TABLE 2

PRODUCTIVITY OF LABOUR IN THE IRON AND STEEL INDUSTRY

Year	*Tons per employee per annum (based on men on roll)*		*Tons per employee per annum (based on attendance)*	
	Ingot steel	*Saleable steel*	*Ingot steel*	*Saleable steel*
1935	38.5	28 9	48.5	36 1
1936	36.5	29.2	46 4	37.0
1937	36 6	27 4	47 1	35 3
1938	38 1	28.8	48 6	36 7
1939	39.3	30 0	50.3	38 4
1940	39 7	30.5	50.8	39 1
1941	35.8	27.8	47 0	36 4
1942	31.2	22 7	40 9	29 7
1943	34.2	26 0	43.5	33.1
1944	31.3	24.5	40 4	31 6
1945	34 0	25 0	43 9	32.3
1946	33 0	24 1	44 4	32.5
1947	28 7	21 1	38.3	28.2
1948	28.2	20 9	37.3	27 7
1949	32 1	23.2	42 6	30 9
1950	34 9	25.8	45 8	33.9
1951	35 0	26 4	45 6	34.5
1952	34 6	25.8	45.2	33 7
1953	34 8	25.3	45 0	32 9
1954	34.5	26 0	45.2	34 0

SOURCE Same as for Table 1

In Table 2 productivity (production in tons per employee per annum) has been calculated on two bases—(1) on the basis of number of men on roll and (2) on average attendance per day In examining changes in productivity it seems better that productivity calculated in terms of tons of saleable steel instead of ingot steel be considered Because ingot steel produced in a year may not be rolled during the same year the correct criterion therefore appears to be the *productivity in terms* of saleable steel Analysis has mainly been done on the basis of tons of saleable steel production per unit of employed person based on attendance figures This is because it gives us an indication of the measure of effort put in per ton of production

For the purpose of analysis the period 1935-36 to 1954-55 can be divided into three distinct parts on the basis of average productivity (i) the period between 1935-36 and 1943-44 (ii) the period from 1944-45 to 1948-49 and (iii) the period between 1949-50 and 1954-55 Between 1935-36 and 1943-44 productivity was highest in 1940-41 which was 39 1 tons The low figure of productivity in 1942-43 should not be taken into consideration due to the fact that there was serious labour unrest and subsequent breakdown in plant operations in that year The average productivity, therefore per employee during the first period (omitting the year 1942-43) comes to 36.5 tons per annum.

During the second period average productivity dropped to 30 5 tons per year per employee based on attendance This fall in productivity is largely accounted for, firstly, by the deterioration in labour situation in the post war period and violent repercussions resulting in serious labour disturbances following the introduction of a new wage structure from 1st April 1947

The last period (1949 50 to 1954 55) shows some improvement in productivity and the average during the period went up to 33 3 tons per annum This rise is due *firstly* to a reduction in the number of men on roll and secondly to the introduction of incentive bonus schemes during the period However it can be observed that the productivity in the third period was still lower than that in the first period This is largely explained by the fact that due to the age of the plant, the tremendous pressure on the plant capacity to meet war time demands (which led to enlargement of the labour force employed without corresponding employment of capital), meagre time for maintenance and repairs and scarcity of necessary spare parts, production considerably suffered

This is also evident from Table 3

TABLE 3

INDICES OF EMPLOYMENT AND PRODUCTION IN THE IRON AND STEEL INDUSTRY

Year	Index of Steel Ingots produced (1935=100)	Index of saleable Steel produced (1935=100)	Index of attendance of men employed (1935=100)
1935	100	100	100
1936	96 70	102.87	101 10
1937	102 15	101 96	105 02
1938	107 63	106 16	107.28
1939	115 71	117.54	111.57
1940	123 17	128 10	117.51
1941	122 95	127 00	126 84
1942	113 80	110 07	134 81
1943	124 17	125 69	138 28
1944	108 42	113 06	130 07
1945	115.22	112.81	127 15
1946	116 93	113 95	127 66
1947	102.38	100 40	129 61
1948	102 71	101.51	135 40
1949	114 19	119 05	129 78
1950	120.56	118 66	127 12
1951	120 07	120 87	127.59
1952	120.53	119.57	129.28
1953	121.29	118 05	130 69
1954	118 15	118 47	126 79

Source Calculated from source for Table 1

In the years starting from 1949-50 and ending in 1954-55 production of saleable steel rose by 10 5 per cent 18 66 per cent 20 87 per cent, 19 57 per cent 18 05 per cent and 18 47 per cent as against increments in

labour input of 29 78 per cent 27 12 per cent 27 59 per cent 29 28 per cent 30 69 per cent and 26 79 per cent respectively But during the first period it can be seen that increment in production was higher than increment in labour input

According to the Tata officials the number of employed persons was very high for a plant like TISCO with a capacity of 1 05 million tons of ingot steel and 0 78 million tons of saleable steel Careful studies made at TISCO reveal that the Company s labour force in 1954 55 could be reduced to the extent of 20 per cent A plant of TISCO s capacity in 1954 in the United States or in the United Kingdom would require a working force of 5 000 to 6 000 persons It is of course true that in a country like India the labour requirement for a steel plant must be assessed against the general background of adverse climatic conditions poor health of the population low and limited skill of the employed working force and their low standard of living which all reckon to a high figure for labour input per unit of output compared to the corresponding figure in developed countries like the U S A and the U K Moreover in those countries a major steel plant does not require to maintain various repairs and maintenance departments as is required for a plant in India But even making allowance for these factors it appears that the TISCO is overstaffed The main reason for this is that huge numbers of additional hands employed during the last war when increase in production was the main watchword could not be retrenched after the war

It is however expected that for the manning of the additional production units under the Two Million Tons Expansion Scheme launched by the TISCO during the Second Plan it will not be necessary to employ fresh labour Under the Two Million Tons Expansion Scheme gross saleable steel production will rise to 1 5 million tons as against 0 78 million tons at the outset of the Second Five Year Plan Therefore if the number of men on roll is not increased with this doubling of production expected by the end of the Second Five Year Plan productivity per employee based on attendance would go up to approximately 50 7 tons per annum from the average annual rate of 33 3 tons during 1948-49 and 1954-55 [a] In 1958 59 the production of saleable steel has been 0 885 million tons Assuming the men on roll based on attendance remaining the same as in 1954 55 this would mean a production of 33 48 tons of saleable steel per employee based on attendance

The above study of the trends in labour productivity in the iron and steel industry has been so far made without any reference to other factor inputs It is now our purpose to take into account the other major factor capital input and to examine the changes in capital intensity more precisely the changes in the capital labour ratio of the industry during the period under study This is necessary for the essential point that with mostly capital intensive expansion programmes under way the pro

[a] Based on final standard works force figure available in the *59nd Annual Report of the Tata Iron & Steel Co*

ductivity of labour in major Indian manufacturing industries is bound to increase As we have seen above in the iron and steel industry itself capacity expansion of a capital intensive nature is expected to approximately double the labour productivity when production on a full scale under the Two Million Tons programme will be realised

TABLE 4

CAPITAL PER UNIT OF LABOUR WAGE AND PRODUCTIVITY IN THE IRON AND STEEL INDUSTRY

Year	*Gross fixed capital per worker in rupees*		*Index of money wage per worker*	*Index of sales value per unit output*	*Physical productivity of labour*
	Undeflated	*Deflated*			
1937	13 436	13 436			
1939	13 823	13 867	100	100	100
1943	13,067	12 712			
1946	15 907	14,868	113	157	69
1948	16 495	14 844			
1950	18,540	16 105			
1952	20 020	16 484	258**	225**	80**
1954	25 852	18 689			
*1958	66 073	30 989(*a*)	316 4(*b*)	454 8(*c*)	100.2

*1958 figure calculated on the basis of working force figure of 28 000 and gross fixed capital employed in 1958 given in *TISCO Annual Report 1958 59*

** For 1950 53

(*a*) 1958 capital value Addition to capital after 1954 deflated by the average value (which is 327) of the indexes of steel work plant costs for years 1954 57 *The Economist Index* The Economist Intelligence Unit Ltd (London)

(*b*) For the year 1957 calculated on the basis of average annual income per employee

(*c*) Calculated on the basis of gross revenue per unit of output

SOURCE Rosen G *Industrial Change in India* Table 28 p 110 and Table 31, p 120

Looking at Table 4 one can see that gross fixed capital per worker (based on attendance) was Rs 13 436 in 1937 which went up to Rs 66 073 at current value and Rs 30 989 at deflated value (with 1939=100) in 1958 Even in 1954 it was Rs 25 852 per worker Thus the undeflated value of fixed capital per worker in 1958 is 4 9 times and the deflated value is 2 3 times the capital value in 1937 Index of physical productivity dropped to 69 in 1946 rose to 80 in 1952 and more than regained the 1939 position in 1958 when it was 100 2 Index of sales value per unit of output rose by 57 per cent in 1946 with only 13 per cent increase in the index of money wage per worker in the same year The position however reversed in 1952 Index of sales value per unit of output was 225 in 1952 with 258 as the index of money wage per worker The position in 1958 again showed a marked change It should be noted here that instead of index of money wage per worker index of average annual income per employee (with 1939=100) and instead of sales value per unit of output index of gross revenue per unit of output (with 1939=100) have been used Thus

had to be done because the figures of wage rate per worker and sales value per unit of output for the year 1958 could not be made available Even figures for average annual income per employee are not available for 1958 and hence 1957 figures had to be used It has been assumed that the average income per employee and money wage moved in the same direction and sales value and gross revenue per unit of output would show a similar trend Thus it is evident from the above analysis that in 1958 the capital labour ratio in the iron and steel industry went up leading to a considerable increase in capital intensity of the industry With this increase in capital intensity the productivity in the industry has already regained its 1939 level and will increase considerably when full capacity production is realised in the near future

The expansion and modernisation programme undertaken by the Indian Iron & Steel Co under the two Five Year Plans and the establishment of three steel plants in the public sector each with one million tons of ingot steel capacity at Rourkela Bhilai and Durgapur has already led to a considerable increase in the capital intensity of the iron and steel industry as a whole in India and will effect an increase in the productivity per employed man in the industry when all the plants will be working at their capacity The capital cost of the three steel plants under the public sector and their manning list and production capacity are shown in Table 5

TABLE 5

COST OF THE THREE STEEL PLANTS UNDER PUBLIC SECTOR AND THEIR MANNING LIST

	Capital cost of plant (Rs in crores)	*Cost of Township Ore Mines and Quarries & Coal Washeries, etc (Rs in crores)*	*Manning of the plant (No of persons)*	*Production of Ingot steel (in million tons)*
	(1)	(2)	(3)	(4)
Bhilai	131	120.25	*12 000	1
Rourkela	170		*12 000	1
Durgapur	138		*12 000	1
Total	439	120.25	36 000	3

* Approximate figures

SOURCE (1) *Estimates Committee Report 33rd Report* Ministry of Steel Mines and Fuel Lok Sabha Secretariat New Delhi 1959 pp 49-51
(2) *Report 1958-59* Ministry of Steel Govt of India

Roughly calculated on the basis of investment cost and the manning list of steel plants at Bhilai and Durgapur the capital per employed person comes to about Rs 155 347 which is at least 2 3 times as much as the corresponding figure for the TISCO even in 1958 All these indicate a much higher capital intensity in the iron and steel industry in India and a considerably rising labour productivity with increasing production in the coming years than in the pre war and the post war years

At this point it would be interesting to study how the share of wages and salaries in the gross revenue of the industry behaved over time The figures for amounts paid as wages and salaries and the gross revenue were available in the yearly profit and loss statements of the Tata Iron & Steel Co s *Annual Reports for the Period 1937 38 to 1958 59* The ratios of salaries and wages to gross revenue thus calculated can be seen in Table 6

TABLE 6

SHARE OF WAGES AND SALARIES IN GROSS REVENUE

Year	*Wages and salaries expressed as a ratio of gross revenue*
1936	174
1937	147
1938	153
1939	149
1940	128
1941	132
1942	173
1943	164
1944	159
1945	171
1946	185
1947	208
1948	254
1949	255
1950	241
1951	234
1952	223
1953	244
1954	251
1955	226
1956	228
1957	228
1958	202

Year indicates 1st April of the given year to 31st March of the next year
SOURCE Profit & Loss Accounts in the *Annual Reports of Tata Iron & Steel Co* of the years 1936-37 to 1958-59

It is evident that the share declined gradually from 1936 37 to 1941-42 In 1936 37 it was 17 4 per cent which came down to 13 8 per cent in 1941-42 Since 1942 43 it went up gradually (with variations in some years) from 17 3 per cent to 25 5 per cent in 1949 50 This is only but expected due to the fact that for increasing total production to meet the war time demand the number of employed persons was increased out of proportion to the existing plant and equipment Though it was done at an increasing labour cost per unit of output it did not matter much since the price of steel was set on a cost plus basis during the Second World War *During the following three years* it declined to 22 3 per cent only to rise again to 24 4 per cent and 25 1 per cent in 1953-54 and 1954

55 respectively In the following years the share gradually dropped and it was 20 2 per cent only in 1958-59 The share is however, expected to decline with increasing production in the future years It is interesting to note that the share of wages and salaries in income for 29 major industries together has also shown a declining tendency in recent years This can be seen from Table 7 below

TABLE 7

SHARE OF SALARIES AND WAGES IN INCOME OF TWENTY NINE MAJOR INDIAN MANUFACTURING INDUSTRIES
(RUPEES IN CRORES)

Year	*Salaries and wages*	*Net value added by manufacture*	*Share of wages and salaries*
1946	101.5	211 4	.481
1947	135.8	242.2	.560
1948	165.8	317.3	.522
1949	177.2	272.7	649
1950	172.2	253 9	606
1951	189.2	347.2	.544
1952	200 6	315 0	636
1953	205 1	334 0	614
1954	215 6	372 9	.578
1955	231 1	419.5	.551

SOURCE *Ten years of Indian Manufactures 1946-55* Directorate of Industrial Statistics, Govt of India, 1958

A broad comparison between productivity in the iron and steel industry in this country and elsewhere will not be out of place But there is much doubt whether such a comparison would be very much reliable because the way is beset with many difficulties In order that a comparison be valid it must allow not only for the different bases of production and employment statistics in different countries but also for the different natures of the steel industries themselves Kinds of raw materials proportions of raw materials nature of intermediate products and the product mix of the final output differ from one country to another It is therefore extremely difficult to take proper account of and make allowance for these things in a valid comparison However as a broad measure comparative productivity in steel making between Soviet Russia America and India may be seen in Table 8 The indexes of productivity for Soviet Russia America and India are 43 100 and 19 respectively

TABLE 8

COMPARATIVE OUTPUT OF STEEL PER WAGE EARNER IN U S S R, U S A AND INDIA (IN TONS)

	(1) *U S S R* (1937)	(2) *U S A* (1939)	(3) *India* (1941-42)
Production	92 (*a*)	212 (*a*)	39 (*b*)
Index (U S A = 100)	43	100	19

(*a*) Output of steel and rolled steel per wage earner
(*b*) Output of saleable steel per man on roll based on attendance in the Tata Iron & Steel Co
SOURCE Same as for Table 1
SOURCE (For 1 and 2) Galenson, W, *Labour Productivity in Soviet and American Industry* 1955 p 128

It should however be mentioned here that the number of employed persons in a steel plant in India was much larger in the pre war and post war years than in a plant of similar capacity in the industrially developed countries Apart from generally low skill of Indian labour, the productivity figure largely reveals the result of the nature of factor proportion prevailing in the industry so far under Indian conditions Under the impact of recent expansion and modernisation of the existing steel plants and the starting of three new steel plants under the public sector the Indian productivity in steel is sure to go high at least to about 50 7 tons of saleable steel per person per annum in case of the plants in the private sector and about 61 6 tons in case of plants in the public sector [3]

But at this stage a question arises whether expansion of the Indian iron and steel industry on the most modern lines and planning future production on the lines as practised in the U S A or in the U K, has been at all rational where labour is so plentiful in relation to the little amount of capital available in the country In Soviet Russia also the productivity of the iron and steel workers is generally quite low compared to American standards The Russian people are however, concerned over this matter and try to raise productivity of the labour force But rightly enough their first endeavour is to raise the productivity of capital equipment This is simply because compared to the U S A, Soviet Russia has a large supply of labour and small supply of capital And naturally it would be an irrational act on their part to try to raise their labour productivity to the American level [4] In every field of production quite rationally the Russian planners think first and foremost about the productivity of capital equipment Their heaviest pressures and biggest rewards are reserved for raising productivity of capital equipment With their relative supplies of factors of production they devote their primary endeavour to maximising productivity of capital

[3] Calculated for the Bhilai Steel Plant on the basis of data in pp 136 and 137, *Estimates Committee Report 1958 59 33rd Report* Ministry of Steel Mines and Fuel, Lok Sabha Secretariat New Delhi 1959
[4] Clark, M G *The Economics of Soviet Steel* pp 247 77

And the result is that the productivity of Soviet blast furnaces and open hearth furnaces is higher than those of the Americans' but the productivity of the furnaces per worker is much less With their large endowment of capital equipment the Americans and the British people can lay emphasis on labour saving devices to continuously raise output per man But in the Soviet Union and in the Southern and Eastern European countries the primary drive is to squeeze as much output as possible out of their limited supplies of capital It is high time that this be the aim in our country also Even after ten years of economic planning entrepreneurs in India both in the private and the public sectors to a large extent seem unaware of the fact that factor proportions in industries should as much as practicable correspond to the factor endowments in a country Therefore in utilising our present iron and steel capacity and in all future expansions of the industry the main drive should be to increase productivity per unit of blast furnace and open hearth furnace capacity rather than laying main emphasis upon raising labour productivity through introduction of highly capital intensive methods

Cost of Living Index in India 1890 1958

THE PRESENT paper is in the nature of a survey and criticism of the existing cost of living figures in India Attempt has also been made to derive some figures from the available sources but no new index has been constructed

The name of the cost of living index is somewhat misleading since people interpret it to include changes in living cost which might not be due to price changes The government of late realised this and in order that this misjudgement does not take place the change in name from the cost of living index to consumer price index was introduced This makes the name to tally with the concept more fully It now more definitely bears the idea *of a measure of changes in retail prices of goods and services* which enter into consumer demand by means of appropriate weighting of the price changes

Scope of the Paper

The present paper first takes the period 1890 to 1912 for which a similar set of data is available There is a gap from the post war I to pre depression period except for Bombay Bombay has been taken separately for consideration since for Bombay relatively more elaborate data are available The second period for study is from 1929 to 1939 for which period some data of some places are available The last period is of course from 1939 up to-date for which relatively ample data have been made available Then we have gone to some general observations about the relation between the cost of living dearness allowance and standard of living and about the relative benefits derived by the middle class compared to the working class Lastly we have come to the discussion of the difficulties of index construction of the cost of living figures in India International comparison of the cost of living and some observations about family budget data that have been necessary in constructing the cost of living figures have also been added to the paper for the sake of comprehensiveness though it leaves much to be desired I have not deliberately discussed the historical aspects of the attempts that have so far been made to compute the cost of living figures I have taken only those that are of some significance

The Period from 1890 1912

For all informations regarding prices wages cost of living and related

matters during the period 1890-1912 one must search into the pages of the *Report of the Enquiry into the Rise in Prices in India* by K L Dutta Almost no other publications are available which can give fairly reliable informations about prices cost of living and wages The publications by the Government of India entitled *Prices and Wages in India* do not give very reliable data so that K L Dutta has avoided use of these data as far as possible Owing to its inaccuracy its publication has been stopped by the government in 1923 on the recommendation of Inchape Committee [1] Besides there are no indications about the cost of living in those publications

However there are ample price and wage statistics in K L Dutta s report but no separate data of the cost of living index have been given K L Dutta has also arrived at real wage indices presumably by deflating the nominal wages by retail price index As a matter of fact he did not state any definite method for calculating the money and real wages indices except for certain remarks about the weights that he used But even then conceptually it is always permissible to arrive at the real wages indices just by having nominal wages divided by retail prices

So far the data about the retail prices in different places can tell us about the cost of living in different centres it appears from K L Dutta s report that during 1890 1912 while All India cost of living rose by about 40 per cent the cost of living of Madras rose by about 46 per cent of Madras North by more than 41 per cent of Gujarat by 41 per cent of Calcutta and C P by about 37 per cent of Agra by 34 per cent of Bombay by 30 per cent and of Assam by less than 30 per cent

There was a general uniformity of the changes in the cost of living as indicated by the retail price index with the changes in the wholesale price index *(see Table 1)*

TABLE 1

BASE AVERAGE OF 1890-94=100 (K L DUTTA)

	All India Retail Price index	*All India Wholesale Price index*
1890	97	97
1891	99	98
1892	104	103
1893	102	102
1894	98	100
1895	99	101
1896	106	106
1897	125	121
1898	108	106
1899	103	104
1900	123	122
1901	116	116

[1] Antsey Vera *Economic Development of India* p 447 No 3

TABLE 1 (*Contd*)
BASE AVERAGE OF 1890 94=100 (K L DUTTA)

	All-India Retail Price index	*All India Wholesale Price index*
1902	109	111
1903	104	107
1904	102	106
1905	112	116
1906	125	129
1907	129	133
1908	142	143
1909	132	133
1910	127	132
1911	128	134
1912	136	141

[We have taken the wholesale price index of the Prices Enquiry rather than of the Atkinson or of the Commercial Intelligence Department just in order to maintain the comparability of the price data] The wholesale and retail price indices at the All India level do not show much of variance and they both bring out a general upsurge in price level 1900 onwards In 1900 for the first time the retail and wholesale price levels shot up from 103 and 104 respectively to 123 and 122 respectively, i e about 20 per cent

The Calcutta retail price index rose from 107 in 1900 to 133 in 1912 in Bombay for the same period the rise was from 117 to 126 and in Assam from 118 to 138 [1] The Gujarat Madras C P and Agra indices of retail prices do not show such sharp rise in this period So with the available data we can only make this comment that there took place some sharp rise in several places as distinguished from others and on the different rates in which the retail prices varied But beyond that we cannot go deep into any explanation since the facts allow that only

We must here take note of one of the important limitations of our analysis about the condition of people with the help of the cost of living or retail price data only and it is this that the indications given by the changes in the cost of living data can at best give a partial picture For a total situation we must also consider the effects on net earnings This is why considering the increase in the price of the produce sold rent or land revenue and increase in general wages etc the conclusion about this period which can be given in summing up has been that in spite of about 30 per cent rise in the cost of living index the real wages also have shown rise in most of the places save in Bombay and Gujarat The All India real wages index has risen by 20 per cent

The shortcomings of the analysis with the figures of K L Dutta are inherent in the nature of his price and wages figures They

[1] Dutta K L *Report of the Enquiry into the Rise in Prices in India* Vol II p 278

have been criticised by H L Chablani in his *Studies in India Currency and Exchange* These criticisms are not directly relevant here

The more relevant limitation is, however, that we have not been able to compare the results deduced from K L Dutta's report with any other figures so that their authenticity cannot be verified

We cannot extend the same set of indices of K L Dutta to the ensuing years We get for Bombay certain indices after the period covered by K L Dutta But due to the wide divergence in weightage and the number of industries covered (which, of course, Mr Dutta has not given) the indices cannot be joined

Period 1929-39

The period 1929-39 i e from the beginning of depression to the beginning of Second World War, we observe as it should be, general low level of prices and cost of living With 1927 as base the cost of living figures of Ahmedabad, Nagpur and Jubbulpur (for figures see Table 2) always remained very low and during the years of pronounced depression the figures went down to 50's or 60's After 1930 the rise in the cost of living was never marked above 80 This of course does not mean that living standard was high because during this time money income too went low and so real income was also low

TABLE 2

	Ahmedabad 1927 = 100	*Nagpur* 1927 = 100	*Jubbulpur* 1927 = 100	*Jamshedpur* 1914 = 100	*Jharia* 1911 14 = 100
1929	97	97	90	172	170
1930	87	85	78	148	147
1931	75	85	62	121	122
1932	76	62	59	116	140
1933	72	58	55	105	95
1934	71	57	54	106	99
1935	71	58	56	110	103
1936	71	58	63	107	103
1937	75	63	61	106	100
1938	71	61	57	104	101
1939	72	63	59	107	114
1940	80	68	60	114	113

We have figures for Jamshedpur and Jharia with base 1914 Compared to 1914 as 100 there was high cost of living in 1927 but gradually during the years immediately preceeding and following the depression the indices went down to the extent that in 1937 the index for Jharia was 100 that is at the same level as in 1914 The trend during this period is therefore very clearly discernible It is a falling trend due mainly to the depression of the overall economy

Period 1939—up-to date

The war and post war periods can be most elaborately studied because of the relatively better availability of data during this period We get two sets of figures The first set, with 1939 as base, is available for places like Ahmedabad, Bombay, Sholapur, Jalgaon, Calcutta, Kanpur, Nagpur, Jubbulpur and Madras The second set, with 1949 as base, is for places like Ernakulam, Trichur, Bangalore, Mysore, Kolar gold fields, Hyderabad, Jhana, Cuttack, Jamshedpur, Gauhati and Silchar Figures for these places are also available from 1944 to 1949 with 1944=100 and we have transformed the series with 1944=100 to the series with 1949=100 so that for these places we have single whole series with 1949=100 For Delhi we have a special difficulty in transforming since we get two series—one with 1944=100 extending upto 1949 and the other with 1939=100 but beginning from 1950 so that we get no common year in the two series

We write the wholesale price index with 1939 base side by side with the All India cost of living index The retail price index could be more illuminating but because of the lack of a general retail price index we have to compare the wholesale price index with the cost of living trends Assuming the trend of retail price is the same as the trend of wholesale prices one can get fairly significant results even with the wholesale prices so far as comparison over years is the object in view

Analysing the trend of the cost of living figures with the 1939 base we find that both the wholesale price indices and the cost of living indices have experienced a tremendous upsurge during almost the whole of the period (see Table 3) The rate of increase was highest during 1940 to 1943 and there was a slight reversal after 1950 This is the period of war time inflation and post war control of prices We have separately discussed the problem of indexing during this period in the later part of this paper Here it is sufficient to note the upward trend of the cost of liv ing indices of almost all the places But the All India cost of living index is always higher than the Bombay index—a fact which can be explained partly by the inflated figures of Kanpur Sholapur etc and partly attribut ed to underestimation of Bombay cost of living index due to war time difficulties of taking quotations of prices of things that had mainly been sold in blackmarket

The figures for other places like those in South India, Assam and the industrialised part of West Bengal and Bihar which have 1949 base also show a continuous rise in the cost of living but as a whole the rise bas been of the order of 80 to 90 per cent over the period 1944 to 1956 But during the same period the rise in the cost of living in other places previously considered has been much more

Bombay Cost of Living Index

So far as Bombay cost of living is concerned we get indices beginning

TABLE 3*

	Ahmedabad	Bombay	Sholapur	Jalgaon	Calcutta	Kanpur	Nagpur	Madras	Ernakulam	Trichur	Bangalore	Mysore	Kolar Gold Fields	Hyderabad	Delhi	Ajmer	Jhansi	Cuttack	Jamshedpur	Gauhati	Andhra	Silchar	All India Wholesale price index	All India cost of living
1939	100	100	100	100	100	100	100	100															100	100
1940	109	107	104	109	106	111	110	106															118	07
1941	119	118	115	123	115	123	119	114															129	107
1942	156	150	155	180	141	181	165	130															159	145
1943	282	219	252	284	289	306	290	180															218	208
1944	200	226	276	295	279	314	267	267							100	62	66	07	72	78		72	241	209
1945	272	226	275	291	283	308	259	228							103	68	61	09	72	70		07	241	209
1946	286	210	200	326	275	328	285	239							107	73	77	72	75	07		70	267	285
1947	300	265	340	369	309	378	320	277							122	04	87	80	80	76		80	267	323
1948	333	288	406	410	339	471	372	315							132	101	103	91	98	91		00	367	360
1949	339	292	410	425	348	478	377	330	100	100	100	100	100	100	132	100	100	100	100	100	100	100	381	371
1950	353	298	398	425	349	485	372	332	102	102	105	103	106	105	311	104	111	111	105	08	98	106	400	374
1951	356	314	430	468	370	451	391	341	106	105	115	113	110	108	370	111	116	122	116	110	103	115	439	389
1952	353	321	426	446	351	441	380	337	106	105	115	113	120	100	373	108	110	109	112	111	102	102	386	382
1953	376	346	443	476	349	453	387	358	107	107	104	115	123	115	306	104	104	107	112	102	106	95	393	393
1954	332	312	402	401	347	408	373	348	107	107	106	106	118	108	300	91	82	100	102	95	101	93	386	374
1955	295	322	336	353	321	371	364	328	107	100	109	00	109	07	389	83		99	98	87	114	86	355	350
1956					317	428	398	305			114			116	377	95		100	106	00	103	09	403	389
1959							422				126			124		99		110	115	103	111	105		412

For Delhi figures for 1944-49 have been constructed with 1944 as base and for subsequent years with 1939 as base. They are not comparable

from 1890 upto present date with different bases and with different weights calculated by different persons The first ever index number for Bombay which covers the period 1890 to 1912 is available from K L Dutta s retail price index as we have seen earlier The next period 1900 to 1934 is covered by an index prepared by K Mukherjee[3] taking 1934 as base and the following as weights Cereals (covering all pulses) — 52 other foodstuffs — 28 Clothing — 5 and kerosene (covering all fuel and house rent) — 15 The two indices have an overlapping period of 13 years and we can join the two indices by some statistical device Though the weights that have been used are not same the two series when they are transformed to the same base of 1912 give a fairly high correlation co efficient of 769 so that we can assume that the same set of relation between the two indices represented by the regression line of Y (K Mukherjee s index) on X (K L Dutta s index) also holds good for the previous ten year period back (i e 1900 to 1890) The regression line of Y on X is Y=36 1+ 583o X And using this equation we can have the values of Y extended from 1900 to 1890 We write the whole series in the last column of Table 4

The index thus found out may be tested as regards its approximate correctness if we compare it with a similar index available in the *Bombay Labour Gazette* 1932 (June) This series has been constructed by taking only the July months in each year rather than the annual average and 1914 has been chosen as the base Our index has a base in 1012 but the difference between 1912 and 1914 is only of two points So the comparison is quite valid as an indicator of the approximate general trend of the move ment in the cost of living The comparison shows that there is a close cor respondence between the two series such that during the inflationary years of 1916 to 1921 the rate of increase in the cost of living has been much the same and again in times of depression in 1931 33 the rate of decrease has been the same and the two sets of figures tell almost the same story The slight changes that have been noted must have been due to the changes in weights that have been used and also due to the fact that one takes the annual average while the other is only an index of the figures of July taking it as a representative month So here we get a fairly close corres pondence and we can take it for granted that during this time the data that we are using by modifying K Mukherjee s index give us a fairly real picture of the trend

We can similarly compare the final cost of living index that we are using here by comparing it with the official index with 1934 as base Even with changed weights the official index[4] shows a fairly close correspon dence with the index that we are using and the correlation coefficient is 993 so that 1 r^2 comes to 014 which means that the forces contributing

[3] *Artha B nana* Vol I No 1 The cho ce of 1912 as base is due to the normalcy of the year just preced ng the year of World War I

[4] I could here give the orig nal calculations of K Mukherjee as they are in *Artha B jnana* Vol I but I found them as incorrect by calculation

to the difference in movements contribute only 014 per cent of the move ments So we can legitimately take these figures to be indicative of real trend as far as data permit

One more method of judging the accuracy of the data by comparing with parallel data that has been used by Professor A L Bowley[5] in study ing the cost of living index in England from 1880 to 1914 Bowley took the breakdown figures of the cost of living indices of England of food rent clothing fuel and sundries and a general weighted average of them with 1914 as base Then he took Sauerbeck s wholesale index numbers of food and materials which are mutually exclusive and together provide an exhaustive list of things consumed He derived a set of empirical cost of living data by the method of partial correlation which gave the equation C=33 4+0 32F+0 34M where C=cost of living index computed from this formula F and M are Sauerbeck s food and materials index number The empirical data such derived have now been compared with the actual data already derived and the comparison should be valid since by theorems in statistics the derivation of the weighted average is same as fitting linear regression (which is partial correlation)

This method could conveniently be used by me for comparing the avail able cost of living data with the empirical data constructed by the method of partial correlation of food and materials index had they been available for India for the specified time Only import prices and export price indices are available for India from 1861 to 1940[6] but the imported and exported goods are neither exclusive nor do they exhaust the total list of things so that we cannot derive any data for the cost of living by the method of partial correlation between these data of import and export prices This important method has therefore come to little use in Indian study of the cost of living for the lack of necessary data

Now we can actually see the long term trend of the cost of living index and compare it with the wholesale price index that is available in a similarly comparable manner

One obvious fact that appears from the trend of wholesale prices and cost of living indices is that there is a general symmetry in the progress of the cost of living *pari passu* the progress of the wholesale prices This is however as could be quite legitimately expected The second important observation is that on the whole over the long period of about 44 years (1890 to 1932) neither cost of living nor wholesale price has risen very much As a matter of fact the cost of living rose from 80 in 1890 to 92 in 1934 — a rise by only 12 points — and whole sale prices rose from 73 in 1890 to 87 in 1934 So the story of secular inflation is not real in the case of Bombay The third important observation that one can make about the available data is that while over time there has been little change in the level of the cost of living and wholesale prices

[5] Bowley A L., *Wages and Income in the U K*, p 121

[6] *Index No of Indian Prices 1861 1931* issued by the Economic Adviser of the Govt of India with 1873=100 and *Statistical Abstract of British India* which continu ed the series upto 1940

there has been at least one period of great upsurge in both prices and cost of living and that period began from 1914 the year of the First World War The topmost level reached by prices and cost of living was in 1920 and evidently the war time shortage of goods and increase in money supply were the causes Both the indices reached as high a position as 205 After the end of hostilities it took several more years for prices and the cost of living to come down to the original level After 1920 there was a continuous fall in the prices and cost of living for about 14 years until at 1934 it was stabilised From 1930 to 1939—the period known for its precarious disinflationary trends the Bombay price level remained low at the region of 80 to 90 taking 1912 as base level And after 1939 there was again a general upsurge in prices and the cost of living But this period we will study with a different set of data having a different base namely 1939=100

The period from 1934 up to date can be covered by the data of the revised series on the basis of the data of consumption pattern acquired from the family budget enquiry into Bombay city between May 1921 and April 1922 This was an improvement on the first publication of the cost of living data in 1921 based on aggregate consumption method without any weighting being attached to it evidently because of the lack of any family budget survey However the revised series was prepared by the Directorate of Labour Information in 1937 with base as July 1933 to June 1934 The weighting that was attached was like this Food—47 Fuel and lighting—7 Clothing—8 House rent—13 Miscellaneous—14

It can be shown from the available data that the general cost of living index which is an average of the several indices like that of food and clothing is more smooth and continuously rising than the other indices particularly the food index and the clothing index The clothing index has got several humps the first being from June 1942 to June 1946 the second from June 1947 to June 1949 and the third from June 1950 to December 1951 This was really very natural since cloth was one of the main items of restricted output and hence of blackmarketing This can only explain the very high level of price level of clothing relative to the other things but the regular humps cannot very well be explained except by the lagged reaction of the private sector being confronted with a tremendous upsurge in demand and at the same time control of prices

The second important fact about the situation is the leading part played by food index in the total index evidently because the weightage given to food index is 47 The major modification to the general cost of living figures has been by the food index Generally most of the time the level for food prices has been higher than that for the general cost of living which means that the downward pressure of the other indices has been balanced by the general high level of the food index

The third important observation one can make is that the period is one of steeply rising cost of living beginning from the start of Second World War upto the present day The rise in the general index has been from 94

TABLE 1

Overlapping years

	Dutt's index after transforming to base=1912	*K. Mukherjee's index after transforming to base=1912*
1900	93	91
1901	86	87
1902	83	82
1903	81	85
1904	86	83
1905	83	92
1906	87	83
1907	87	83
1908	95	96
1909	93	86
1910	96	89
1911	94	87
1912	100	100

Cost of living indices for Bombay

	1890	1891	1892	1893	1894	1895	1896	1897	1898	1899	1900	1901
Final index figure 1912=100	80	80	86	81	81	78	78	86	83	82	91	87
Wholesale price index 1912=100	73	72	75	77	75	76	86	83	70	76	85	86

	1902	03	04	05	06	07	08	09	10	11	12	13	14	15	16
Final index figure 1912=100	82	85	83	92	93	83	96	86	89	87	100	92	98	108	114
Wholesale price index 1912=100 (only July months)	77	72	75	80	94	100	101	91	89	91	100	104	107	111	134
													100	101	108

	1917	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Final index figure 1912=100	110	151	172	205	181	161	157	171	150	134	136	128	139	122	100
Wholesale price index 1912=100 (only July months)	112	101	201	205	172	169	157	161	106	158	117	116	148	125	93
	118	119	86	190	177	65	153	157	157	157	156	147	148	139	108

	1932	33	34
Final index figure 1912=100	110	103	92
Wholesale price index 1912=100 (only July months)	92	88	87
	109	103	

Cost of Living Indices in Bombay Base 1939=100

	1934	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55
Final index figure	91	95	95	100	100	100	109	118	150	219	226	224	210	205	288	292	298	314	321	346	342	322

in 1934 to 346 in 1954 taking 1939 as base These are the most inflationary years for Bombay as well as for India and the inflationary price trends have also been reflected in the upsurge in the cost of living

Working Class vs Middle Class

Most of the cost of living index numbers that have been available so far are relating to the working class—particularly the workers living in the factories No or negligible data are available for the middle class The higher class cost of living number is perhaps not very useful because of the fluctuating income that they enjoy and also because of the highly fluctuating taste and consequently a highly uncertain percentage distribution of their income on the articles of consumption. The main purpose of judging the effect of the general changes in price is served if we have only working class cost of living index rather than that of other classes The working class consume almost everything they earn and any change in price is likely to change their real pattern of consump tion much more than it may be in the case of other groups of consumers The cost of living index for the working class assumes enough significance because of this fact that their income and expenditure correspond more closely than it is for any other group of people Real income is under standable much more significantly if the consumers are represented by working class rather than by other higher classes

An arguments is frequently put forward that numerically the (factory) working class in India is not so big as to outweigh in importance the consumption pattern of the rural millions who represent *about 70* per cent of the population It is therefore, argued that a cost of living index number for agricultural class will be more significant But then it may be rightly pointed out on the other side that the pattern of consumption expenditure *of the people in the same* income class be it in agricultural or industrial sector, is likely to be approximately equal The other weighty reason for not taking the cost of living index of the agricultural class separately is that the agricultural sector in India represents a self employed non monetised sector where most of the commodities are consumed without being put into the market The compilation of the data of consumption expenditure of such a large number of people would be a tremendously difficult task that the government machinery with its limited resources and purpose never ventured to undertake Even if it had been done it could not be anything significantly different from the pattern of consumption of the factory workers except for certain moderately noticeable preferences of manufactured goods of the factory workers which constitute by far the least item in working class consumption pattern

Progressive Effect

Though in our discussion main stress has been laid on the cost of living of the workers yet the whole analysis can be made a bit more significant

if attention is also focussed on how the change in price level has affected the cost of living of the working class relatively to that of the middle class The middle class may be said to include roughly the people employed in government and other services who draw salaried income and whose dearness allowances have not much connection to the change in the cost of living index

For comparison of the effects the cost of living index number of middle class are essential but so far as the present data are concerned only the index number of middle class of Calcutta Delhi and Gauhati are available One could also construct the middle class index number of cost of living if the retail prices and the relative weights (*i e* the percentage of expenditure on different categories of goods) were available But so far as the present data can allow we can make an analysis of the relative advantages of the two classes consequent upon a change in prices other things remaining same (meaning thereby that presently we are not concerned about the changes in wage level)

About Calcutta the middle class index has been made available by the Research Department of Capital which has constructed and since maintained a middle class index at the request of the Bengal Chamber of Commerce since 1940 The weights have been like this

Food	33 6
Fuel	4 4
Clothing	12 4
Miscellaneous	29 6

The weights have been kept fixed over the period 1939 59 in order to bring into clear relief the effect of the change in prices The assumption of constancy of consumption pattern of middle class has not however been correct because of the fact that in general the salaries level and dearness allowance of the middle class have not been sensitive to changes in the cost of living index Another difficulty with the Capital index is that nothing has been said about the war time difficulties regarding the non availability of commodities and rationing of a large bulk of consumables amounting to forcible change of consumption pattern of the middle class Anyway one fact above everything else gives testimony to the authenticity of the Capital index and it is that the commercial firms affiliated to the Bengal Chamber have accepted this index for giving dearness allowance to their employees

The weights of the Capital index have been arrived at by family budget study by combining random and purposive sampling method 167 family budgets were consulted The weighted anthmetic mean of all items was taken to form the group index and of these group indices the weighted anthmetic mean has given the final cost of living index

In comparing the relative effects of a successive change on working and middle class we may employ two methods The one is to compare the

two indices whose base year is same and by examining we can say that the class whose indices are absolutely higher than the indices of the other class is more hard hit compared to the other The other method is to take that of Dudley Seers[7] who was concerned with the rates of change in the indices of each particular class If the rate of increase in the cost of living index of middle class in one year from the previous year is more than the rate of increase of the index of working class in the same years then the middle class must have been worse off other things remaining the same by the impact of price changes This has been well defined by Seers as progressive effect of price changes in favour of the working class if the ratio

$$\frac{\text{Middle class cost of living in time T}}{\text{Middle class cost of living in time T 1}} - \frac{\text{Working class cost of living in time T}}{\text{Working class cost of living in time T 1}}$$

is increasing Both these methods must be employed at the same time in order to judge whether the middle or the working class is better off by the rise in prices Seers was in a sense not complete in his analysis be cause he only introduced the comparison of the rate of change of cost of living This progressive effect as defined by Seers can only tell us whether one class is better than itself in one year T relative to the past year (T 1) more or less than the rate of progress of the other class from T 1 to T What cannot be explained by Seers criterion is that apart from the rate of change one class may be absolutely compared to the other class by the absolute figures of the cost of living indices Unless we com pare one class in a year in absolute figures of the cost of living and also in relative rates of change in the cost of living we cannot expect to get a full picture of the whole thing

From Table 5 we can see that starting from the initial position in 1939 there was a change in the cost of living in favour of the middle class in 1945 as both the general and food index were lower than the same indices of the working class But over the 15 year period (1945 59) there has been a gradual shift of position in favour of the working class This is proved by the fact that while the middle class general index stands at 444 in 1959 the working class index stands at 376 This is also evidenced by a rising or more than par progressive effect in 1946-47 1956 57 and 1957 58 We have also introduced the food index and the progressive effect in regard to the cost of food apart from the general figures because that would reveal the real situation more clearly For example we are here attracted to one interesting feature that while the general index has moved over these 15 years in favour of the working class the food index of the working class has been always (except in three years 1952 1955 and 1956) more than the index for food of the middle class This feautre can only be ex plained after dividing the whole period in two parts The first period is

1943-50 when both the food and general indices of the working class are above the food and general indices of the middle class of each year That means during this period, the middle class was less hard hit by the movement of prices than the working class But during this period the progressive effect moved in favour of the working class so that after 1950-51 they enter into the second period 1950-59 when the general cost of living index of the working class has been smaller year to year than general indices of the middle class During this period the progressive effect also moved in favour of the working class but the food index of the working class has been higher than the food index of the middle class in certain years This has been due to higher weightage given to food by the working class compared to the middle class which has raised the food index for the working class but on average the general average has not risen because of the stickiness of the non food consumables which are consumed more by the middle class

TABLE 5

Year	1945	1946	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959
Calcutta middle class cost of living (1939=100)	253	267	286	320	350	363	382	389	394	391	393	412	426	438	444
Calcutta working class cost of living (1939=100)	283	275	309	339	348	351	370	351	349	327	324	310	365	383	376
Calcutta middle class food index (1939=100)	309	316	340	386	427	439	449	470	455	447	442	470	468	509	509
Calcutta working class food index (1939=100)		355	360	428	451	474	471	485	455	469	455	427	464	502	526

	1945-46	46-47	47-48	48-49	49-50	50-51	51-52	52-53	53-54	54-55	55-56	56-57	57-58	58-59
Progressive effect (general)	1 08	95	1 1	1 09	1 08	1 03	1 0	1 07	1 06	1 01	1 09	88	98	1 03
Progressive effect (food)	1 01	91	1 08	1 05	1 03	1 00	1 12	94	1 01	1 05	98	96	1 00	

while the index prepared by *Capital* was based on market quotations taken by the office of *Capital* However we cannot definitely say any thing about their divergence since both these figures cannot be known but *there is no prima facie ground for believing* that they will differ signi ficantly A large difference would of course matter very much because by the progressive effect method of Seers we wanted to measure only the effects of changes in prices

Here again we may note that the comparison of the effect of prices and cost of living changes would not give a very good comparison of the real standard of living of the middle and working classes because the incomes of the two classes might not have changed in the same proportion Most probably the middle class had been more hard hit because of the stickiness of their salaries and because of no direct connection of the increases in the cost of living and their dearness allowance The working class wage on the other hand has a direct connection between the cost of living and dearness allowance

War time Difficulties in Indexing

The problem relating to the cost of living index arising out of the conditions created by the war was one of the subjects discussed at the conference of Provincial Representatives held at New Delhi in September 1943

The problems in war time can be classed broadly as the following

(1) UNAVAILABILITY OF GRADES OF COMMODITIES ORIGINALLY INCLUDED IN THE INDICES AND FREQUENT CHANGES IN THE SUBSEQUENT GRADES APPEARING IN THE MARKET The problem arose in many cases that the quality of rice that the working class was consuming was no longer available when the new index was constructed during the war in the new index with 1939 as 100 For example the Bombay workers consumed Burma rice and after the loss of Burma the imports of Burma rice ceased so that a superior quality rice was therefore substituted for it In case of Madras index the quality of rice that was originally taken was Vadan Samba boiled and when it was no longer available it has been substituted by the cheapest variety of boiled rice

In C P under the government regulated distribution of foodgrains whatever variety is available is taken into index calculation Irrespective of whether it is comparable with the original variety or not wheat of which usually there was one variety available was taken into considera tion About rice two or three varieties are available and the most coarse variety is taken

In Bihar the problem of lack of continuation of articles has also been solved by finding nearest substitute

The difficulty of getting comparable price quotations is greatest in case of clothing group In Bombay the *Bombay Labour Gazette* states the problem was seen even before the war and the Bombay Labour office had to interpolate new varieties during the basic period In Punjab and Bihar

and most other States, the qualities underwent severe changes by non availability in general and also by adulteration

(ii) NON AVAILABILITY OF COMMODITIES The Bombay Labour office has had to readjust its cereals group in the index owing to the entire absence of quotations for two cereals It is reported from C P that no wheat was available either in Nagpur or Jubbulpur in the month of January 1943 and the price quotation adopted for the index was the controlled rate In Bihar the supply of certain articles like coal has been very intermittent with the consequence that no price quotations were available for sometime or those reported were only nominal

(iii) PROBLEMS ARISING OUT OF INTRODUCTION OF RATIONING AND PRICE CONTROL The rationing system which allots different quotas for different commodities and generally at an amount lesser than the original un hindered demand has definitely altered the original weights that were given to the commodities But the same weightage is followed by the Bombay Labour office and in C P for Nagpur index (or most of the indices)

(iv) MULTIPLICITY OF CURRENT PRICES The problem about prices in times of rationing due to war arises because of the fact that in that time the price that rules in the open market is strikingly different from that which prevails in a rationing shop or in a blackmarket It is quite a common knowledge that much of the consumption during the period of rationing in India was through blackmarkets There was the additional fact that the employers and in certain cases municipalities opened shops and sold commodities at cheaper rates The main difficulty was the multiplicity of price rates for the same commodity in the market

The consequences of these difficulties have been that where the price quotations of the controlled rates have been taken as in Bombay city where two out of five articles included in the cereals sub group were not available in the market and the others were available only in the employers shop or controlled shops at lower prices the index of cost of living has been much lower Thus the Bombay index for November 1943 stood at 236 whereas Sholapur index stood at 293 (Nov 1943) and Ahmedabad (Oct 1943) index stood at 329 which was much contrary to the simple fact that living was really more costly in Bombay city than in Ahmedabad or Sholapur

The devices resorted to for meeting these war time difficulties were generally agreed to be of the following pattern

(1) If a commodity was not available in the market the weight of that commodity shall be added to the weight of another commodity which is consumed as the best substitute for it

(2) If the quality of a commodity selected is not available in the market it should be replaced by another quality of that commodity which was next in popularity in the base period provided its price in the current period is available If this is not possible the new quality

selected should be one which is most popular in the current period and the current price of this new quality should be compared if possible to its price in the base period and if it is not possible, if the new quality is superior to the superseded quality to the basic price of the old quality

The method followed was of course not the same in this period in Bombay Kanpur Nagpur Sholapur and Ahmedabad In Bombay the detailed method that was followed was that the working class required the same quality of cereals (20 6 paylees per month) to maintain the same standard of living as at the basic period (the year ending June 1943) This was according to the working class family budget enquiry in 1932 33 This being assumed the total amount of cereals was then distributed among the articles currently available in proportion to the total quantity of each cereal sold to the working class during the month in government grain shops and in shops run by cotton textile mills and other large employers And then the total price for this sub group of cereals has been prepared by multiplying these quantities by the prices of them as obtaining in these shops Much the same method was followed in Nagpur

Here the weights given to this sub group of cereals remain same in total as in the original year but the break down or the relative weights between different articles of cereals have definitely changed. This of course averts the difficulty of non availability of articles but this surely introduces some duality in the meaning of the index number calculations of the period This is the first defect of the method adopted

Secondly as we have already noted the price quotations in Bombay included much of the rationed prices which made the index of the cost of living in Bombay much lower than that in Sholapur and Ahmedabad though in all available evidences (i e including the purchase outside the rationing field) Bombay was a costlier place to live in than Sholapur and Ahmedabad

Thirdly this calculation has the defect that it assumes that the whole rationing quota and the amounts supplied by employers shops could suffice to cover the whole demand of the workers By all means the amount of rationing quota must have been smaller than the uncontrolled demand so that the blackmarket prices must have entered largely into actual living expenses which the official estimate could not take account of

In Kanpur however a different method was followed Between September 1942 and May 1943 the price quotations were taken both from the open bazaar and from the prices in the employers shops but after May 1943 when the employers shops could not supply many commodities then only the bazaar rates were taken for calculating a general cost of living index but a subsidiary index was also prepared including the prices of the cheaper commodities served by employers only to be used for giving dearness allowance to workers This could be possible because

the industrial concerns in Kanpur found that the supply position of staple articles had improved

The Kanpur index was, therefore, more inflated during this time than Bombay index but Kanpur's method was rather more revealing of the real situation.

Theoretically the solution of the problem lies in attaching weights to the controlled and free market price indices in proportion to the amount of consumption actually done in controlled market and free market For example, in Bombay the proportion of controlled market in relation to free market during the period of control was 51 19 out of a total of 89 The prices of many items in the Bombay index carrying 51 19 weights out of a total of 89 weights were controlled either directly or indirectly as below

TABLE 8

Group	*Item*		*Weights in the general index*	
Food	*Cereals*	*Statutory price control*	0 47	
	Grain	"	16 92	20.21
	Raw sugar	"	0 47	
	Refined sugar	"	2.35	
Fuel and	Charcoal	"	2 10	
lighting	Firewood	"	3 64	7 00
	Kerosene oil	Agreement with suppliers	1 12	
	Matches	Statutory price control	0 14	
Clothing	Dhoties	"	1.20	
	Coating	"	96	
	Shirting	"	1.84	7.20
	Cloth for trousers		.32	
	Sarees	"	2.88	
House-rent		"		13 00
Misc	Travelling—fixed by Govt			3 78
		Total for all items		51 19

All the manufactured items in the index with the exception of soap carrying 10 81 weights out of 89 are controlled items

The solution of the problem may be theoretically found by dividing the weights proportionately to the controlled market and to the free market but practically this could not be done always because by the very nature blackmarket prices could not be quoted rightly and the same quality of things could not be procured

That we are discussing only the war time difficulties does not mean that we are neglecting the other difficulties For example we are quite aware of the difficulties of transformation of one set of data with one set of weights to another base but these statistical devices have been used only in order to trace the trends of the actual situation and not to be accurate as regards the magnitude of the cost of living index in one particular year We do not mention the other difficulties because of their obviousness

Cost of Living and Standard of Living

Discussion about the cost of living at once necessitates some observations about the relation between the cost of living and standard of living The general first hand relation that exists between them is that when the cost of living rises standard of living goes down But this relation could hold strictly if the standard of living is simply understood as the real wages enjoyed by the people As a matter of fact the meaning of standard of living is understood in the subjective sense referring to the attitude towards economic goods and life in general But if standard of living has to be a matter of economic and social policy it has to be defined in tangible and objective terms like (1) the level of consumption or the composite of goods and services of a specific quantity and quality consumed by an individual family or group within a given period (2) social services and free services, particularly those which relate to health, education and recreation (3) working conditions which affect not only the workers' health and earning capacity but also the size and regularity of this income

Thus we see that merely the real wage is not the only, though the main, component of the standard of living and therefore the increase or decrease in the cost of living is not the sole cause for decrease or increase in the standard of living One major factor that has been responsible in India for a relative decline in the standard of living is the growth in population and increase in the size of the family In India the rate of growth of population has resulted naturally in the increase in the size of the family over time so that the standard of living has gone down much more than has been effected by simply the rise in the cost of living

Some Problems of Public Industrial Enterprises in India

I

One of the basic problems to be tackled by all enterprises is that of providing capital for the enterprises What are the sources of capital funds which must be tapped in order to secure the necessary finance for the project? Usually in case of a State enterprise in an underdeveloped country there are primarily two sources from which the necessary capital funds may be available

(i) issue of shares or bonds to the public or
(ii) government participation in shares or loans and grants by the government

Since capital from the first source will usually be a "non starter in an underdeveloped country the latter will in major case be the only method of financing the project in initial stage Foreign aids sometimes provide part of the finance In India as most of the industrial enterprises are formed as companies they obtain their capital largely in the form of share capital The few such enterprises which are managed departmentally like the Chittaranjan Locomotive Works and the Integral Coach Factory at Perumbur obtain their capital in the same way as the Railways do In some cases the State governments also participate in the share capital of the company A part of the share capital of the Indian Rare Earth Ltd is paid up by the Kerala Government In the Hindustan Shipyard on the other hand the Scindia Steam Navigation Co former managing agents hold some shares There is also association of foreign firms as minority share holders The Indian Telephone Industries and the Hindustan Steel are cases in point A few of the public industries are taken to show the general characteristics of such industries The financial structure of these government companies is revealed in the following statement

STATEMENT OF WORKING OF SOME OF THE PUBLIC INDUSTRIAL ENTERPRISES (AS ON 31 3-1959)

ne of the nterprise	*Paid up capital and extent of Govt participation*	*Loans from Govt and interest (Rs in lakhs)*	*Net Profit/Loss (Rs in lakhs)*		*Return to Govt*	
					By way of Interest (Rs in lakhs)	*By way of Dividend (Rs in lakhs)*
Sindri Fertiliser and Chemicals	1700 00 Fully paid up by the Union	Secured 2 92 Rate of int 4½% Unsecured 6 86 Rate of int 3½%	1955 56 1956 57 1957 58 1958 59	163 63 204 71 142 81 159 19	23 52 13 50 13 18 Not available	68 00 at 4% 85 00 at 5% 85 00 at 5% 85 00 at 5%
Hindustan Machine Tools	39 00 Wholly paid up by the Union	Unsecured 167 05 Rate of int 4½% Secured 72 24 Rate of int 4½%	1956 57 1957 58 1958 59	3 09 21 62 41 96	3 91 9 08 8 98	Nil " "
Hindustan Cable Ltd	125 Wholly paid up by the Union	Secured 39 00 Rate of int 4½% Unsecured 30 03 at 4½%	1955 56 1956 57 1957 58 1958-59	6 06 9 93 10 10 9 38	0 71 1 75 1 75 1 75	2.5 at 2% 2 5 at 2% 2 5 at 2%
Hindustan Antibiotics	245 83 Wholly paid up by the Union	30 00 at 4½%	1955 56 1956 57 1957 58 1958 59	8 02 0 57 33 43 87 10	0 57 3 15 3 15 2 47	Nil " " "
Hindustan Insectides	97 00	Unsecured 25 33 at 4½%	1955 56 1956-57 1957 58 1958-59	0 02 3 83 5 61 7 25	Nil " "	Nil " " "
Indian Telephone Industries	400 00 Govt of India —359 00 Govt of Mysore—31 25 A T E Co Ltd—10 00	Unsecured 1955-56 51 84 1956-57 12 00 1957 58 12 00 1958 59 87 84 Rate of int 4½%	25 96 23 57 24 69 26 97		2 33 2 33 2 87 Not available	10 00 at 2½% 8 00 at 2% 8 00 at 2% 10 00 at 2½%
Hindustan Shipyard	518 17 Held by the India Govt 413 92 by the Scindias—104 25	Loans from Govt and the State Bank of India 650 43 Rate of int 4½%	Losses 1955 56 1956-57 1957 58 1958 59	0 78 3 69 4 75 0 04	Not available " "	Nil " "

Balance Sheets and Profit and Loss Accounts of the Companies for the relevant years

It is seen from this statement that loans along with share capital are an important source of finance to these industries There is of course no general rule as to what part of the total capital requirements will be made as loan Generally it seems that when finance is required for the construction and expansion of the plant the whole of this amount is made as loans and later it is converted partly or wholly into share capital [1] The working capital is provided by the government or banks as loans This practice of giving loans which is sometimes as high as 15 or 20 per cent of the total capital invested puts a heavy strain on the enterprise as it has to bear a heavy burden of interest payment in the initial stage of the project It is clear however that the method of granting loans rather than buying share does not affect its position permanently for when the enterprise starts making—profits a part of the expenditures—made during construction stage is written off And as the concern builds up internal resources it depends less and less on loans from outside for working capital for the concern Nevertheless in the early years of growth of the company specially if it is expected that the financial position will be somewhat shaky interest rates and the terms of repayment of loans need careful working out

These questions require detailed discussion which it is not possible to do within the scope of this paper It may however be observed that while easy money can have the most undesirable effect on the management of the enterprise it cannot be denied that for new enterprises when loan financed some kind of relief in respect of their capital commitments may be urgently necessary for some time [2]

The profits and loss shown in the given statement do not however indicate the efficiency of the concern The paid up capital does not always measure the total capital investment loans in many cases form quite a significant part of the total capital invested in the company In some cases like the Sindri Fertilisers and Chemicals Ltd the concern has been able to plough back significant amount of profit in business

Sound Commercial Policy of Public Enterprises

It is sometime argued however that the efficiency of a government concern is not solely to be judged by the amounts of profits it makes for apart from profit making there is a special role that the enterprise is expected to play in the economy This difference in the motive is said to be the distinguishing feature of the public enterprise as against private enterprise

This distinction between public and private enterprises is not so clear as it was before The very conception of profit is sometimes a vague one On the other hand the meaning of "public service" with which public enterprises are generally associated is also quite ambiguous and even

[1] *Industrial Enterprises in the Public Sector in India*—Paper prepared by the Institute of Public Administration New Delhi for the U N Seminar on Management of Industrial Enterprises New Delhi December 1959

[2] Wilson A H *Public Enterprise and Economic Development* Routledge & Kegan Paul London 1959

when it relates to specific objectives the managers of such enterprises may be quite indifferent to the fulfilment of such objectives

One of the frequent reasons which motivate the States to undertake an enterprise is for economic development a project must be started even when the prospects of profits at least in the early years of growth are practically absent that is the State has to consider more than merely calculating commercial viability when it invests in utilities In this particular sense therefore it is not quite true to say that public enterprise irrespective of the goods or sources it supplies is necessarily just like any other commecial concern [3]

On the other hand considering particular circumstances profit making at least for some enterprises may itself be a desirable objective We shall however have occasion to discuss this point in greater details

Apart from this question of profit making from the stand point of actual running of the concern sound commercial policy has a very definite meaning It means in essence that a public enterprise should try to minimise cost of production and make the concern self sufficient It should also be changing the production policy with the changing market requirements and lastly the price of each unit should be equal to the cost of production Though these principles are not all absolute persistent disregard of these will surely result in the wastage of scarce resources

Policy of cost reduction is not easy to follow The policy is to be based on the standard norms regarding the cost of production If they are based purely on historical cost they may give only a rough measure of calculating costs though these will also be useful in the early years of the enterprise before other norms based on detailed study may be formulated In doing this experience regarding the actual working of the enterprise will be necessary In India a starting point is sometimes provided by the prices of imported good but then this is not always helpful as the production conditions are different in India as compared with other countries Nevertheless such comparisons show that some of the enterprises in India are functioning well Mention may be made of the Chittaranjan Locomotive Works Hindustan Machine Tools DDT Factory at Delhi etc

Cost of production may be minimised by methods which may be economical from the point of view of the individual enterprise but not at all for the economy taken as a whole High standard amenities may have to be provided by the concern and this may be too costly for the particular enterprise The Chittaranjan Locomotive Works for instance spent as much as 40 per cent of the total expenditure on housing and other welfare provisions for the workers of the concern But this can be justified as a means of providing industrial peace and on social grounds Expensive training may have a vital role to play in improving general standard of skill in the country

The second principle of adjusting production policy with market requirements may in some cases have to be set aside though there are instances

[3] *Ibid*

of failure of public enterprise for not conforming to the principle Ceylon is a case in point *In the case of a large number of government industries* in India the principal customers are the government departments, for others the number of buyers are small as is the case with the Hindustan Shipyard Ltd *Here it is easier for the concern* to maintain contact with the customers and to know their requirements and difficulties But because in many cases the pattern of economic development becomes lumpy, it may be necessary for a particular enterprise to adapt itself not to the present but to the future requirements of the market as for example, the Hindustan Steel is doing [4]

The principle of adjusting unit prices with unit costs involves a complicated system of accounting In order to determine what exactly goes into *the cost of production and what is the cost of production of each given* items at each particular stage of production a number of things have to be considered Cost of production is a continuous process and the price fixing authority has to be equipped with figures of the cost of production at different stages of production And as has already been mentioned sometimes public industries have to provide costly welfare to the workers The cost of production thus is inflated to include all these expenditures on amenities The distribution costs which vary from industry to industry *are also to be included in the calculation of the cost*

In addition provision has also to be made for obsolescence of plant and machinery For a concern manufacturing drugs e g changes in or total replacement of the plant may be essential if a new drug is discovered

Provision for expansion of the plant is also to be made in the calculation of cost As the market for these products expand expansion of plants are to be carried out including sometimes the expansion of the production of allied goods which could also be produced economically thus benefiting the *industry and the public in general*

II

Prices and Profits of Public Enterprises

Linked up with the above is the question of profit making by the public enterprise For convenience of discussion the *problem can be broken* down into two viz

(i) Should there be deliberate policy of making profits or incurring losses
(ii) the problem of handling profits or losses if any

There has been a lot of discussion on this point According to the Report of the U N Seminar of Public Enterprises held in 1954 public enterprises should make neither profit nor loss [5] This was supported in

[4] *Ibid*
[5] U N O *Report on the Seminar on Organisation and Administration of Public Enterprises in the Industrial Field* N Y 1954

the Report of the Gorwala Committee which stated that in public enterprises the prices should be such as to breakeven over a period of years or taking one year with another [6]

This view was however found quite rigid and not always applicable to underdeveloped countries Dr V K R V Rao for instance points out to the increasing difficulty faced by the government in raising revenue through direct and indirect methods specially in the background of the Third Five Year Plan Under such circumstances he says public industries must make profits and contribute to capital requirements of the public sector [7]

For an understanding of this point we must examine the three types of public enterprises which function in the economy There may be enterprises which produce goods competitive with those produced in the private sector or there may be State monopolies and lastly the mixed types So far as the first and the third types of enterprises are concerned the question does not arise at all as the price will be fixed through the market mechanism The question of price fixation as a matter of policy is of vital importance in case of enterprises which enjoy monopoly or near monopoly position Here again we have another point to consider viz what are the objectives which are sought to be fulfilled by the price policies of the public enterprises These are primarily

(*a*) maximum utilisation of scarce resources
(*b*) accumulation at the projected rate

These objectives may not be mutually compatible and thus what policies the public industries should follow will depend on the particular objective which is aimed at Where the policy is to be related to the latter profit making may not be wrong In the former case of course profit making must be ruled out On the other hand for a continuous growth in an underdeveloped country profit of public enterprises may be an essential source to contribute to the normal funds for public investment This is especially true in the present circumstances in India where under the Third Five Year Plan the surpluses of the public enterprises other than Railways are envisaged to contribute an amount of Rs 440 crores for financing the Third Plan [8]

It is sometime argued however that where we have a mixed economy as in India where the consumers goods are in the private sector and public sector deals with capital goods the rigid principle of profit maximisation may turn out after all to be a misleading half truth even in the context of growth"

But there is an important consideration to be made here If the enter

[6] Gorwala A D *Report on the Efficient Conduct of State Enterprises in India* New Delhi 1951

[7] Dr Rao V K R V Note on Prices Income Wages and Profits in a Socialist Society" *Economic Review* 22 July 1959

[8] *Third Five Year Plan—A Draft Outline* p 47

prises cannot make any profit it follows that the whole of the finance for expansion and development in the public sector must come from the government and the government will then have to raise the additional revenues either by taxation which may be difficult, or by inflation which will in most cases be undesirable

Moreover, to give people income and then remove it by taxation or inflation is an inefficient and self limiting procedure On the other hand, we are not quite sure whether the lower prices of the products of public industries will automatically induce the people to save more or the business men to use the higher profits in the best national interest If for instance, the taxation of agricultural income is not feasible for some reason or other, and the cultivators are not inclined to save more out of the higher income made possible by the use of fertilisers supplied from the public *sector*, it may be both *necessary* and desirable to raise the price of the product.[9]

We have also to take into account of the fact that there has been quite a big rise in the size of the public sector in India and the government today owns and controls almost one third of the entire corporate sector of the economy[10] Under such circumstances it may be generally suggested that public industries should not only pay their way but also yield a reasonable surplus[11]

In a note submitted to the Planning Commission in April 1960, Prof J K. Galbraith has condemned the "post-office socialism"[12] that India is supposed to be pursuing as a "stagnant form of economic organisation" Industrial plants in the public sector must he insists take on their full job which is to be efficient producers and to accumulate the surplus that will *provide for future expansion Profit must be the most important test of* effectiveness of the public enterprises[13]

The general policy of the Government of India has now been that the maximum economic returns must be secured from all public enterprises[14] In the matter of price fixation for individual enterprises we find that no clear-cut principle has been laid down The prices of imports the interest and capacity to pay of the consumers the general requirements of the country—all these are taken into consideration and an ad hoc decision is arrived at Many enterprises sell their product at a price calculated on "cost plus" basis Bharat Electronics Ltd fixes prices on the basis of actual cost of materials and labour and adjusted overheads plus 10 per cent for

[9] This is not to suggest, however that all cases of supply of electricity to a rural area in an underdeveloped *country for instance could be made with profit making*

[10] The paid-up capital of the government and private companies at present are Rs 468 4 crores and Rs 11,247 crores, respectively (Source *Fortnightly Review*, 1 February 1961)

[11] This question is specially significant in the context of the recent discussion on public participation in the capital structure of the public sector industries

[12] Public ownership that contents itself with avoidance of loss or a modest profit

[13] Galbraith, J K., "Rationale of Economic Organisation", a note submitted to the Planning Commission in April, 1960

[14] *Draft Third Five Year Plan*, p 61

profit [15] In the case of DDT Factory at Delhi, the product is sold at no profit no loss basis

The major part of the profit wherever available, is utilised primarily for building up the concern on a sound commercial footing and also aiding expansion and development programme Payment of high dividend has not so far been encouraged Hindustan Aircraft Ltd has for instance, utilised the major part of the profit in building up a reserve for research, development and plant rehabilitation etc and only a very small part has been distributed as dividend at a low rate only once in the last ten years The total revenue thus built up amount to Rs 1 30 crores against the paid up capital of Rs 10 3 crores Hindustan Antibiotics Ltd has used the profits to repay the government loans and then to build up reserves for expansion For the Sindri Fertilisers & Chemicals Ltd the position is better It has paid fairly good dividend on the capital invested and still built up good reserves and used them for meeting a part of the cost of expansion and development This preference for allowing the enterprise to use their earnings for their own expansion and development will help the workers and consumers to realise that these surpluses are essential for the development of the enterprise and they will be less likely to assert a privileged claim on the profits of the enterprise

It is in the light of the considerations made above that a suitable price policy is to be desired It is not possible, however, to be more concrete outside the context of a particular enterprise or a group of enterprises An actual price policy can be determined only when we have detailed factual knowledge about the individual enterprises [16]

[15] Lok Sabha Estimate Committee—*30th Report* p 44

[16] What would be most desirable but too much to hope for in the near future, is the working out for each type of enterprise or groups of enterprises of a price policy based on as sophisticated an economic analysis as that found in Mr I M D Little's The Price of the Fuel —Hanson *op cit* p 440

MANJULA BOSE

Banking in a Developing Economy

I

THE TERM developing economy" as it is used in this paper requires some explanation In a sense all economies are developing In this paper however reference is made by the use of the word only to the less developed countries of Asia Africa and Latin America which are trying to achieve rapid economic growth

The title of this paper has an apologetic air about it A questioning may arise as to whether the banking system has at all any role to play in the rapid economic development of a country This is quite natural Most academic discussions on economic growth are concerned with real factors About the role of monetary factors economic discourse is more reticent Economic planning has come to mean laying down of certain physical targets and the allocation of particular sums of money for different purposes It is considered sufficient to lay down a policy regarding real output Monetary policy will automatically adjust itself

It is true that obstacles to economic development in a backward economy are more real than financial A mere injection of money and credit cannot start a process of growth because of social technical and economic rigidities within the system There are shortages particularly of real capital (not in the sense of money capital but in the sense of machinery and equipment) technical skill and entrepreneurial ability There are not sufficient idle resources to be put into use at a very short notice—except of course a redundant labour force which cannot be fully employed because of the shortage of other cooperant resources

All these do not detract in any way from the importance of the monetary mechanism For the banking system if it cannot generate an expansionary process can yet make its way smooth What is more lack of adequate financial resources may prove quite a big handicap The very fact that there are *serious handicaps to a process of growth* in a backward economy makes it all the more imperative that these difficulties should not be enhanced by any shortage of credit

The exact nature of the problems of an underdeveloped economy requires a brief mention before discussing the service that can be rendered by the banking system First the rate of capital formation in such a country is proverbially low because the marginal propensity to consume is almost equal to unity It is the duty of the banking system to meet a large part of the growing capital needs of the economy through the crea

tion of credit An inevitable corollary is an expansion of bank resources because otherwise banks will be compelled to function with a dangerously slender resource of cash In other words banks must be able to absorb as large a volume of savings as possible This can be achieved by a proper adjustment between deposit expansion and credit creation But this task assumes serious proportions in an economy where the margin of savings over consumption is very low the banking habit is as yet underdeveloped and the non monetised sector comprises a comprehensive part of the total economy Even if the monetised sector expands with gradual industrialisation the problem of lag between savings and investment will remain Any increase in income will be eaten up through increased consumption by the people who normally live on the verge of subsistence And whatever increased savings there is it will either be hoarded or diverted to unproductive channels In a developed economy the bulk of the money that is not consumed may be safely conjectured to have been invested The difference between saving and hoarding is much more marked in an underdeveloped economy A large section of the community is beyond the exchange nexus and does not use money In their case excess of saving over consumption can neither be calculated nor be drawn out for investment

In a developed economy income differentials are often pointed out as the cause of a large volume of savings and investment There are large differences in income in an underdeveloped economy But this fails to add to the total volume of investment It is a common experience in such countries that the richer section of the community comprises mainly of the trading and land owning classes They invest their wealth for such unproductive purposes as buying gold ornaments or real estates Or else it is re employed in trade This behaviour may be irrational from the social stand point yet it is a very rational choice for the individual Under the circumstances these are the safest and most profitable forms of investment

Nor does ploughing back of profits have much sense here Nowadays in an advanced economy the corporate form of enterprise is the most common one and it is financed largely by the ploughing back of profits This method of finance however implies that savings will tend to be confined within the sector where they generate It implies that in an underdeveloped economy savings will tend to revolve round commerce and land owning

Thus there are two real obstacles to the growth which cannot be eradicated by a simple re arrangement of institutions On the one hand the margin of savings over consumption cannot be stretched much without affecting the standard of living of the masses or injuring the local market for manufactured articles On the other hand even if savings are increased to some extent there is little likelihood that it will flow to new productive ventures automatically rather than to primary industries or commerce

Another facet of the problem is the persistent threat of inflation in a

developing economy Some rise in the level of prices is always likely to be attached to a process of growth In the initial stages of development attention is devoted to the development of certain basic industries While there will be an increase in the demand for consumption goods due to an increase in incomes this is not going to be satisfied by increased production of consumption goods immediately The danger is still greater in an underdeveloped economy where there is a shortage of real resources of production Banks may extend long term finance for industrial development Such credit expansion by banks may have disastrous effects Where factors of production required in the industrial sector are not readily available such an investment policy would be tantamount to industrialisation by means of price inflation [1] In fact such countries have an inherent inflationary bias for various reasons A basic reason is that the investment effort regarded necessary to raise productive capacity to a desired level is usually far in excess of what is feasible on the basis of available savings Secondly there is the special sensitivity of underdeveloped countries to export receipts Inelasticity of output poorly developed distributive channels inadequacy of transports communications and other basic utilities all aggravate the problem of an unbalance between demand and supply There are other causes like an absence of the habit of saving narrowness of the financial markets impending an effective mobilisation of savings a long established and rational mistrust of domestic currencies further intensifying the lack of savings political instability inadequacy of monetary policy due to undeveloped nature of the money market etc So in most underdeveloped countries especially those in which a deliberate effort is being made to accelerate the rate of economic advance the probability of excess credit and deflation is generally far greater than that of shortage of credit and inflation [2] Inflation will have undesirable effects on the internal standards of living It will also affect the balance of payment position adversely and hinder essential imports of capital and skill from abroad

All these add to the responsibility of financial institutions While it is extremely urgent that capital should be conducted along those directions where it is most desired secondary industry often is in a weak position in respect of finance in a backward economy Low incomes set a low limit to the rate of capital formation and the pioneer industries cannot compete successfully for their use They have no reserves of undistributed profits of their own Here economic development will depend more upon the growth of lending institutions than in advanced economies In a mixed economy where decisions are taken unilaterally by individuals on the one hand and by the State on the other banks assume a role of vital importance as the institutions which can secure a proper co-ordination between State policy and private initiative

[1] UN *Processes and Problems of Industrialisation in Under-developed Countries* p 6
[2] *Ibid* p 54

The functions of the banking system in a developing economy are, then, *three fold* *First, banks must try to mobilise* as large a portion of the savings of the people as possible Secondly, banks should direct these savings from *less to more essential channels* of investment Thirdly, the banking system should steer a course clear from inflationary credit expansion

Many argue that the margin of savings over consumption is so low in such countries that the banking system can do very little to expand the volume of credit This statement, however, requires modification

It is widely believed that the volume of investible funds lying idle in an underdeveloped economy is not as small as it might appear on the surface Notwithstanding the low income levels prevailing there is definitely a scope for capital formation in a backward country The instance of Pakistan has been stated as a case in point in a recent study by the World Bank It is pointed out that in Pakistan in 1954 despite the widespread conviction that it would be impossible, the government-owned Industrial Development Corporation was able to sell with ease more than half the equity in its paper mill to private investors[2] Diamond has cited a World Bank Mission's Report on India which shows that in many underdeveloped countries including India, the amount of capital available for investment *is often surprisingly and inexplicably large" and* that "very few of the businessmen consulted by the Mission on this subject (of industrial investment) appeared to regard financing as a serious problem".[4] This view has been corroborated by Wolf and Suffrin in their study entitled *Capital Formation and Foreign Investment in Underdeveloped Areas* According to their opinion, 'frequently in underdeveloped economies, the supply of savings is a less significant limitation on the rate of productive investment than the demand for capital'[5] Several kinds of evidence have been cited in support of this proposition Thus, the balance of payments surpluses of some underdeveloped economies, resulting in the growth of foreign exchange reserves, imply the existence of savings realised by the economy as a whole, which could be used to increase productive investment Again, the international accounts of underdeveloped countries are frequently characterised by an outward movement of capital and the private funds of the wealthy citizens of such countries often tend to be held in the banks and securities of some advanced country such as the U S A , the United Kingdom or Switzerland It is also pointed out that apart from the effective use of existing savings in underdeveloped countries there is also a possibility of stretching the supply of savings further than is usually supposed A recent Indian National Sample Survey is quoted by Wolf and Suffrin It indicates that over 7 per cent of rural expenditures on an all India basis, are typically for ceremonial purposes, such as

[2] Diamond *Development Bank* (International Bank for Reconstruction and Development), p 10
[4] *Current Economic Position and Prospects of India*—unpublished AS-54a Washington D C Aug 1956 p 77 as quoted in Diamond's *Development Bank* p 11
[5] *Ibid*, Chap II, pp 11 13

celebrations, marriages births funerals etc An additional 6 per cent, as a national average, is spent on tobacco, intoxicants refreshments and amusements Similar studies carried out in Indonesia and Turkey point out situations in which, even in relatively poor areas, the marginal propensity to save tended sometimes to be surprisingly high, reaching about 60 per cent in those cases where a strong local demand for capital existed So any pessimism regarding the scope for mobilisation of savings by the banking community may be dispelled The banking system may mobilise quite a large volume of savings for capital formation It is, however, recumbent upon the banking systems assuming an active and, to a large extent, an unconventional role

This is not however the only means by which the banking system can affect capital formation The usual analysis of the process of economic development runs exclusively in aggregative terms It is assumed that all that matters is the aggregate volume of investment But this analysis is insufficient because it assumes either that the composition of total investment is fixed or virtually unchanged over long periods or it implies that its composition is at an optimum which by definition cannot be improved [1] In an underdeveloped economy the composition of investment is far from the optimum A huge portion of the investment is devoted to unproductive purposes There is a large scope for changing the composition of the volume of investment and thus affecting the total productive capacity of the country So even if we assume that the ratio of capital formation is necessarily small in an underdeveloped economy we are still left with the problem of how an optimum composition of the flow of investment can be achieved" [2] The question may be asked whether the banking system has really any initiative in the matter Is it not true that the demand for credit must come from the investing public? It is true that the lack of demand for capital for productive purposes is as much a problem as a lack of supply of capital The stimuli that are needed for development cannot be supplied by monetary sources The initiative in economic development has to be taken by the governmental sources in an underdeveloped economy Once however the government has started a process of expansion the banking system can play an important role as a channelling instrument It may play a creative role by changing the assets portfolio Instead of making the safety and liquidity of assets their only concern banks may try to satisfy the long term capital requirements of industry

Unfortunately the institutional drawbacks that are prevalent in a backward economy all around affect the banking system also The banking systems of these countries often exhibit certain limitations which render them unsuitable for performing those functions that are expected of them The function of mobilising savings is very often inadequately performed

[1] "Fiscal and Monetary Implications of Development Programmes" article by John H Adler *American Economic Review Papers and Proceedings* May 1952 p 585
[2] *Ibid* p 593

by banks The commercial banks are one of the most important institutional means for attracting savings or time deposits It is, however, common knowledge that the more undeveloped a country is, the lower is the volume of bank deposits in the total volume of money in circulation Undeveloped nature of the economy and political instability go side by side Political disturbance and difficult budgetary position of the government undermine people s confidence in the currency system and discourage savings Inability to attract deposits is often due to a deliberate policy or lack of policy among commercial banks Thus, in Burma and Ceylon the commercial banks discourage large deposits of funds or pay interest rates as low as ½ per cent, on savings deposits The unwillingness or apathy of commercial banks in attracting deposits can be traced to their inability to lend funds safely and profitably Time deposits, again, form a small proportion of the total volume of deposits, reflecting people's desire for liquidity Thus affects the ability of commercial banks to lend Again, except in India, Pakistan and a few other countries the proportion of cash held by commercial banks is very high Consequently, their loans and advances are small in volume Government securities are often the chief type of investment

Even when the commercial banks lend money, they lend it for short-term purposes serving mainly commerce and the working capital needs of industry In a developing economy, however, the need is more for long term finance But the same factors which make for the tardiness of investment do also affect the lending policy of commercial banks In the prevailing atmosphere of uncertainty, commercial banks hesitate to lend funds for more than ordinary commercial purposes "It is probably a direct consequence of the historical development of underdeveloped countries as primary producing economies with a large foreign trade sector that primarily those types of credit institutions are fully developed which serve what appear to be less desirable purposes The commercial banks, on the one hand provide short term credit which enables the commercial community to carry large inventories and incidentally to hedge against inflationary pressures and to maintain the monopolistic position of a relatively small group of merchants in the export and import trade The second type of credit institutions which exist in many underdeveloped countries are mortgage credit institutions which make it relatively easy to purchase landed real estate and to finance the production of export crops But credit for the financing of manufacturing production in general is virtually unavailable [a]

The problem is how to mobilise and transfer the idle savings into productive channels For this, both savers and investors require certain legal safeguards owing to the prevailing atmosphere of uncertainty Active steps have to be taken in order to build up the capital market of the country An active capital market will enable banks to invest their

[a] Adler John H, *American Economic Review, Papers and Proceedings*, May, 1952, p 595

funds profitably, entrepreneurs to raise an adequate volume of funds and savers will be sure of being able to dispose of their assets at any moment This requires sound banking practices limited liability the corporate form of organisation and growth of the stock exchanges Savings generally tend to move within the sector where they generate Since in underdeveloped countries the bulk of the business consists of commodity and land estate speculation, there is little likelihood that finance will be forthcoming of itself for investment in new industries If however a sound capital market is established the possibility of investing capital more profitably may draw funds from other fields and thus help in the mobilisation of savings It is the lack of confidence on the part of savers that prevents them from investing their savings in more productive enterprise There is enough evidence in support of this statement Even in a backward country like India people will invest in the share capital of new industrial ventures if they have sufficient confidence in the credit worthiness of the borrowers Thus the Tata Iron & Steel Co did not have any difficulty in raising its initial share capital through the flotation of shares in the market

Another major defect of banking system in underdeveloped countries is that they are concentrated within a small urban sector of the economy The rural population is deprived of banking facilities although the majority of the population is rural Branch banking of the British type is unknown here Opening of new branches by commercial banks in rural areas is inhibited by service charges lack of remittance facilities etc The Rural Banking Enquiry Committee of India has suggested a number of remedies It is with the purpose of extending commercial banking facilities throughout the country that the Imperial Bank of India was nationalised Branch expansion however raises the problem of securing adequate technical staff for all the branches

II

An important development of our century is the growth of certain specialised institutions for encouraging and promoting industrial ventures in underdeveloped countries During the last quarter of a century one country after another has set up such specialised institutions These are known by various names such as "development banks or development credit corporations The psychology behind their establishment is the same that led France and Germany to set up investment banks in the nineteenth century The underdeveloped countries are two centuries or more behind developed countries in the race for progress At the same time there is going on internally a continuous race between the rate of growth in population and the rate of capital formation Social overheads are lacking the capital market is undeveloped and the individual investors shy to invest Nor are commercial banks willing to lend for more than short term purposes The government is trying to provide

the economy with basic utilities Its efforts must, however, be complemented by the private sector It is with the object of helping the private sector with funds and promoting private investment that these banks are set up They offer a method of bringing together the business ability of the private investor and the borrowing power of the Central Government

These institutions exist today among various backgrounds in countries of Asia, Africa and Latin America or even in France and Britain Of greater consequence is their functioning in backward economies India has three such institutions apart from the State Industrial Finance Corporations Pakistan has two and Japan four There is no uniform pattern for development banks just as there is no uniform set of rules for central banking They differ from country to country in their ownership, sources of finance, relationship with the government, objectives and methods of operation Prominent among them are the Industrial Finance Corporation of India, the Industrial Development Bank of Turkey, the Nacional Financiera of Mexico, etc

In spite of differences, certain generalisations can be made about the aims and objectives of these institutions First, they are intended to help the private sector Secondly, they are to satisfy the long term credit requirements of industry Thirdly, they are to help in stimulating a capital market Fourthly, these institutes will promote new enterprises where necessary Thus, in the statutes of the Industrial Development Bank of Turkey, the following purposes are set fourth

(1) To support and stimulate the establishment of new private enterprises and the expansion and modernisation of existing private enterprises in Turkey
(2) To encourage and assist the participation of private capital, both domestic and foreign in industry established in Turkey
(3) To encourage and promote the private ownership of securities pertaining to Turkish industry and to assist in the development of a securities market in Turkey

In the preamble of the IFC of India, its purpose is laid down as 'making medium and long term credits more readily available to industrial concerns in India particularly in circumstances where the long term banking accommodation is inappropriate, or recourse to capital issue methods is impracticable' It is authorised to guarantee for a period not exceeding twenty five years loans floated in the market by industrial concerns, to underwrite the issue of stocks, shares bonds and debentures of industrial concerns and to grant loans or advances to, or subscribe to debentures of industrial concerns, repayable within twenty five years

The Nacional Financiera of Mexico was established originally to assist in the sale of public bonds and to help the recently established stock ex

change to become an effective market for the securities of private companies In 1941, it was reorganised into an investment bank, being concerned increasingly with new industrial projects Its functions were broadened to include not only lendings to other banks but also direct investment in certain key industries

The Nacional Financiera deserves mention because of its important contributions to industrial growth It devotes most of its funds to larger ventures In fact in 1949-50, 80 per cent of its total investment was in four big concerns Its total investment is not a very large share of the country's total industrial investment Yet, its investments are important because they have helped in removing particular bottlenecks in the economy They were devoted mainly to the building up of the utilities and thus, have laid down the foundation of industrial progress However, the Nacional Financiera is accused of draining the market of funds and thus depriving small firms

These institutions obtain funds by floating shares in the market These shares are subscribed to in various proportions by the government, the central bank, the public and other financial institutions including the commercial banks They also get loans interest free or at very low rates from the government These development banks are chosen instruments of government policy and the fruit of government initiative, even when they are privately owned In recent years a widespread interest is growing in the potentialities of private banks*

The working of the development banks reveals certain inadequacies These are really reflections of the backwardness of the capital market One object of these institutions is to promote industrial investment For this purpose, it is essential that they should not hold on to a particular group of securities for ever They must sell them off at the earliest opportunity and take up some new line of activity But due to the lack of ready sellers, they have to hold on to these securities It has been noticed, e g in the case of Pakistan, that due to the restricted nature of the capital market, the underwriting activities of the Industrial Finance Corporation are rigidly circumscribed, nor can it issue its own debentures In the absence of a capital market, development banks have to start off with ample financial resources They may have to turn to the government for additional capital or for a government guarantee The IDB of Turkey, for example, has been unable to float a public bond issue, the Nacional Financiera of Mexico and the IFC of India have only succeeded in making issues with full official backing Again, in some countries the status and qualification of would be borrowers are not such as to lead to successful lending Many of the projects are inadequately prepared or submitted prematurely, reflecting the shortage of entrepreneurial skill, the low level of literacy, lack of technical information, etc. Thus, it is

* Boskey, Shirley, *Problems and Practices of Development Banks* (published for the International Bank for Reconstruction and Development by the Johns Hopkins Press), pp 7-10

only the large concerns, whose credit worthiness is known, that are getting capital, the smaller firms are being starved To remedy this defect, State Industrial Finance Corporations have been set up in India Indeed, the problem of backward economies is so complex that no re organisation of lending institutions is enough It must be fully supplemented by other factors such as fiscal policy, spread of technical knowledge, establishment of political stability, etc The issues involved tend to move in a vicious circle A country is underdeveloped because it is underdeveloped in all respects

However, the development banks may be useful in several ways First commercial banks in backward countries are often reluctant to mobilise savings because they do not have safe and profitable lending opportunities Where sufficient demand for credit is not forthcoming commercial banks can make a productive use of their resources by participating in the shares and debentures of development banks Secondly, the development banks' investing in the securities or underwriting the bonds and debentures of industrial concerns will add to their credit worthiness and encourage other investors to lend in the funds of these concerns Development banks also have considerable advantage over other institutions in channelling foreign capital into industry They can obtain loans at favourable rates of interest from the World Bank and other sources They can also build up a staff, familiar with the problems, in finance, organisation and engineering of huge industrial ventures, and put this staff at the disposition of each new project they agree to support Technical assistance has proved a great aid to industry So the banks usually offer this sort of assistance or intend to do so in the future [10]

Development banks function in the agricultural field as well Important services have been rendered by the Carteira de Credito Agricoloe Industrial of the Banco do Brazil and similar institutions in other Latin American countries, the State Savings Banks in Australia, etc

III

A very serious bottleneck in any field of activity in a backward country is the lack of adequately trained technical staff This difficulty is present in the field of banking too Where the general percentage of literacy is as low as 15 or 20 per cent including those who have the most elementary knowledge of the alphabets, the delicate function of handling the banking business becomes an impossible task Moreover banking is a field where experience counts as much as theoretical knowledge Each country must evolve, through trial and error the particular methods of banking suitable to it So in the initial stages of economic development a rigid specialisation of banking functions may put too great a strain on a country's limited stock of trained hands It is therefore, desirable that

[10] Boskey Shirley *Problems and Practices of Development Banks* (International Bank for Reconstruction and Development) p 99

the banks combine a number of activities rather than there being different types of banks for different purposes The French and German pattern of universal banking as found in the nineteenth century should be the model rather than the British type Unfortunately commercial banks in underdeveloped money markets usually try to follow the British tradition and concentrate on short term lending The commercial banks should try to come out of this limited range and combine investment banking with commercial banking functions Prudence does not mean a rigid adherence to orthodoxy and exclusion of novelty An interesting recent trend in advanced economies is the increasing diversification of functions of commercial banks Thus instead of concentrating on short term lending banks are increasing their medium term and long term investments This is due in part to the increased liquidity provided by the government securities in the assets portfolio of banks and in part to the growth of fixed term deposits since the war

Secondly the other channel to which commercial bank finance is gravitating is in instalment credit hire purchase finance etc Even the British banks with their conservative traditions are participating in hire purchase finance Sometimes this participation is direct as in the case of the Australian Trading Banks These developments raise new issues regarding banking control That does not mean that these developments should be reversed Rather new banking techniques should be devised to meet the new circumstances These developments are worthy to be noted by backward countries

The recommendations made by the Reserve Bank of India s Committee (*On Finance for the Private Sector*) reflects a similar reorientation of attitude The Committee points out that many loans made by Indian banks although ostensibly short term are allowed to be renewed from time to time Thus they are virtually medium term loans Even if they are used to meet working capital requirements they have a wider effect in that they release other funds from working capital needs and enable industry to use them for long term purposes The Committee supports participation in long term loans by banks provided the banks are satisfied in their own judgement that such advances are for moderate amounts and are consistent with bank liquidity The Committee recommends that the banks should endeavour in an indirect manner to make increased finance available to the private industrial sector Leading banks in India in co operation with insurance companies could form a consortium or syndicate for underwriting or investing in new issues of shares and debentures of industrial companies whenever they are satisfied about the soundness and prospects of the projects

A serious responsibility devolves upon the central bank too It must come in to fulfil the gaps left by other financial institutions The example of Mexico is worthy of imitation by other countries The Bank of Mexico is the centre of the Mexican banking system and the mainstay of the government s financial policy fostering the development of credit institu

tions generally, the money market, the capital market and the industrialisation of the nation

The Bank has systematically supported the national and private credit institutions through granting of rediscounts and credits and purchase of securities The assistance afforded by the Bank of Mexico to the economic development of the country has taken various forms It has helped to carry out government programmes and has assisted agriculture and industry, thus filling the gaps due to the insufficiency of savings and of the resources of other credit institutions Besides contributing to the acceleration of economic development by acting as a lender or investor, the Bank, as a central institution has promoted a monetary and credit policy tending to reduce the impact of inflation and to create conditions permitting an increasingly stable development of the national economy

IV

Above all, the problem of credit control in a developing economy demands a satisfactory solution Yet it is a very intricate one For, what is required in a backward economy is not a simple quantitative curtailment of credit, rather it is one of generating an adequate volume of credit and conducting it along productive channels The weapons required are very subtle At the same time the underdeveloped nature of the money market hinders the exercise of the central bank's control In most of the backward countries at least in Asia, the central bank is comparatively recent in origin and inexperienced This adds to its difficulties

General methods of credit control, while they are limited in their effectiveness even in developed economies are still more so in an undeveloped money market There being no developed bill market, open market operations of the central bank are handicapped The method of variable reserve requirements which is usually regarded as a blunt weapon in any circumstance has little effect in an undeveloped money market because banks are in the habit of maintaining a very large reserve of cash It is to be noted that in recent years, the percentage of cash maintained by Indian scheduled banks is declining A rise in bank rate may be ineffective because commercial banks are out of debt to the central bank, or have excess reserve of cash or may import funds from abroad Because of the inadequate prestige of central banks, moral persuasion is out of question

The central bank's control is further restricted by the fact that a major portion of the economy is beyond the place of its influence A large amount of production and investment is financed with the entrepreneur's own resources The amount of credit channelled outside the banking system, either in the form of open book credits or of private loans, is substantial Credit restrictions aimed at the foreign trade sector of the economy are likely to be offset at least in part, by the alternative of ob

taining credit from foreign traders or from foreign banks Again, channelling of credit for productive purposes is not easy Thus many countries particularly in Latin America have found that the borrower may easily construe a productive purpose for a loan application while at the same time devoting his own funds for less productive and more profitable purposes The fact that underdeveloped economies are particularly susceptible to inflation makes the task of the monetary authorities a specially difficult one

Because of these defects of the general methods of credit control selective methods of control have many advantages These are often designed to redress some assumed bias towards particular types of investment or to ensure preferential treatment for investments thought to be especially desirable There are several different types of selective control Some generalisations can be drawn about their nature First they are particularly difficult to administer in countries where administration is defective Thus it is usually necessary for both the central bank and the commercial banks to distinguish arbitrarily between essential and non-essential sectors of the economy between productive and non productive investment and between speculative and non speculative borrowing Furthermore the authorities must continually concern themselves with frequent and at times serious iniquities with possible discrimination as between banks and with the division of responsibility between the central bank and the commercial banks over the approval of all loan applications

Secondly as an emergency weapon in well marked sectors of the economy where credit control can exercise a strategic influence on the progress of inflation they are of undoubted value However these are additions to rather than substitutes of general methods of credit control

It may be concluded that the banking system can play a creative role in economic development It depends however upon the quality of the bankers themselves They must adopt a cautious and yet unconventional attitude to the requirements of the economy One of its greatest achievements will be in training a generation of men capable of handling the problems of development successfully The rapid development of Mexico and some other Latin American countries has been attributed to their success in building up a cadre of men trained in finance and technology Such examples are worth imitating or else an underdeveloped economy will be rolling on within the vicious circle of underdevelopment for ever

[11] Fousek, Peter G., *Foreign Central Banking The Instruments of Monetary Policy* (Federal Reserve Bank of New York 1957) p 77

The Case for Insurance of Bank Deposits in India

I

THE UNDEVELOPED nature of the banking mechanism in this country is reflected in the frequent incidence of bank failures The history of joint stock banking in India reveals several distinct phases of banking crisis, some of them of quite a serious nature Ever since the Travancore and Quilon Bank failed in 1937 the issue of bank failures had been on the forefront The issue was relegated somewhat to the background in the war period This period saw a large expansion of bank offices in the country Banks began to operate with an inflated assets and deposits structure All sorts of undesirable practices appeared among bank management In the immediate post war years the crash came Reckless expansion of advances and loans of a non liquidating nature a low capital deposits ratio inefficiency and lack of integrity in management the post war stock exchange crisis—all led to a series of bank failures particularly in West Bengal In the face of bank failures the Reserve Bank had always pleaded the insufficiency of its legal powers of supervision and control

In this context the Indian Banking Companies Act was passed which apart from the statutory requirements regarding the volume of loans and advances liquidity ratio etc added considerably to the powers of supervision and inspection of the Reserve Bank of India Joint stock banking in India was placed on a sounder footing than ever before The banking crisis also weeded out many of the uneconomic branches or units The fifties of this century were started with the confidence that any serious bank failure in India could not occur in the future unless there was gross negligence of duty or error of judgment on the part of the Reserve Bank of India In 1956 the powers of supervision and control of the Reserve Bank of India were increased further by enactment

Under these circumstances the failure of the Lakshmi Bank in Maharashtra in June 1960 and more important of the Palai Central Bank in the same year have revived people's concern at the frequent incidence of bank failures Fortunately this was not followed by any large run on other banks In itself the Palai Central Bank was only a medium sized bank with total deposits of Rs 8 50 crores at the time it closed its doors It was a B class scheduled bank Yet the failure of the Palai Central Bank deserved consideration for more reasons than one First it was the biggest joint stock bank in Kerala Secondly at the time of

its failure it was still a growing concern Its advances and deposits were increasing It had opened a new branch in Delhi only this year It had been paying dividend at the rate of 4 to 5 per cent even as late as 1957 Thirdly, the storm of criticism that was, in this connection levelled against the Reserve Bank has not left the prestige of that authority absolutely unimpaired There are reasons to feel that the Reserve Bank has not exercised its powers of inspection and control in the best possible way Finally the two cases of failure mentioned above were not absolutely stray incidents Only last year eight non scheduled banks went out of existence These being non scheduled banks their failure did not draw much attention at that time But the fact that a bank is small in size and in resources does not detract from its importance in the economy For the smaller banks cover two thirds of the banking map of the country and are responsible for extending banking facilities to as many places as are covered by the bigger banks As sources of institutional finance for industry the position of smaller banks is no less if not more important than that of the bigger banks For they maintain very close touch with their customers and with local conditions Moreover it is the smaller banks which are the most vulnerable to any loss of confidence on the part of depositors

Bank failures pose a two fold problem for any country There is first the direct financial loss to depositors and capital loss to shareholders Some idea of the financial loss can be found from Table 1

TABLE 1

PAID-UP CAPITAL AND DEPOSITS OF INDIAN JOINT STOCK BANKS WHICH HAVE GONE INTO LIQUIDATION OR HAVE OTHERWISE CEASED TO FUNCTION 1948 58 *

Year	No of Banks	Paid up Capital	Deposits
1948	45	1 82 68 906	
1949	55	1 30 63 921	
1950	45	1,28 49,522	
1951	60	62 07 305	
1952	31	15 79 667	
1953	31	1 13 57 917	
1954	27	47,50 971	
1955	29	46 45,296	
1956	19	19 76 745	54 65 517
1957	25	27 55 974	22 79 187
1958	23	32 93 641	1 74 47 560

* *Statistical Tables Relating to Banks* 1958 p 29

In the United States in 1930 banks with deposits of $ 837 million were compelled to close their doors Apart from this immediate financial loss bank failures pose a long run problem affecting the development of banks in the country Bank failures lower people s faith in the banking system and prevent a healthy growth of commercial banks The growth of strong banks and of the banking habit among the people will help in mobilising domestic savings and putting them to productive use Failure of a parti

cular bank may also have chain reactions on all other banks because depositors have lost their confidence in the system as a whole. In a country where the efficiency and integrity of bank management is often subject to question, such loss of confidence is not unreasonable Yet, in the context of the vast investment expenditures envisaged in the Third Five Year Plan and the need for mobilising domestic resources to the fullest extent possible, this lack of confidence in the banking system can be ill afforded today

II

Many proposals have been put forward for lowering the incidence of bank failures in the future Among them are proposals for amalgamation of the weak and strong banks, insurance of bank deposits, and, if necessary, even the nationalisation of commercial banks The proposal that has drawn the attention of the largest number is that for insurance of bank deposits The eagerness for a Deposit Insurance Corporation for India was inspired by the successful working of the Federal Deposit Insurance Corporation in the U S A Bank failures had been a very common event in U S A, not only in the years of the depression, but even during the prosperous years of the twenties Hundreds of banks failed every year Between 1921 28, 5 214 banks failed 659 banks failed in 1929, 1,350 in 1930 and 2,293 in 1932 By the early thirties the prestige of bankers had reached its lowest limit As a remedial measure the Federal Deposit Insurance Corporation was set up by the Banking Act of 1933, as amended in 1935 All member banks of the Federal Reserve System and qualifying non member banks became members of the F D I C Its capital has been subscribed by the Treasury and the Federal Reserve System The value of deposits covered by the scheme was originally $5,000 for each depositor The coverage was later raised to $ 10,000 for each depositor The banks had to pay one twelfth of one per cent on all deposits, not just insured deposits The system had met with serious controversy at its inception Previously Deposit Insurance Corporations had been set up in many states, but these schemes had all come to grief The failure of these state systems may, however, be explained by various factors The banks chartered by the Federal Government did not participate in these schemes The banks affiliated with any given insurance scheme did not constitute a diversified risk No very serious attempts were made to supply the funds with an adequate amount of cash Finally, the agricultural depression of the 1920 s was responsible for the failure of many rural banks The successful working of the F D I C over more than twenty years is ample testimony to the wisdom of setting up this institution

The scheme for deposit insurance had an anti depression outlook During the years of the depression when many banks had failed and depositors had lost billions of dollars, the policy pursued by the banks tended to aggravate the depression further Faced with huge withdrawals

of cash by panicky depositors banks were unwilling to maintain the volume of their loans and advances Deposit insurance had a multiple purpose First it sought to restore confidence of depositors and aimed not only negatively to prevent runs on banks but also positively to encourage a return flow of cash to the banks when they would reopen Secondly it aimed at offering full protection to depositors who were not in a position to judge the quality and soundness of a bank and thirdly offering better supervision and examination for the thousands of banks that were not members of the Federal Reserve System or that displayed a very high failure rate Thus the original and continuing purpose of deposit insurance is not only to protect depositors against losses on their accounts but also to improve the quality of banking and to promote general economic stability by preventing runs on banks with the attendant drains on bank reserves" (Report of the Sub Committee of Monetary, Credit and Fiscal Policies of the Joint Committee on the Economic Report United States 81st Congress 2nd Session) That the basic objectives underlying the scheme have been vindicated is evident from the fact that seventeen years later a congressional sub committee completely accepted these basic principles focusing attention only upon the structural details Although the situation in our country is far from that of a depression yet the importance of these objectives in the present day economy of India cannot be overemphasised For the development of sound banking is as essential for economic growth as during a period of depression

III

The question of insurance of bank deposits came up before the Rural Banking Enquiry Committee of India in 1950 The Committee however did not think the time opportune for the introduction of a scheme of deposit insurance as it felt that the banking situation in the country was likely to be fundamentally changed by the passage of the Indian Banking Companies Act It felt that as soon as the Reserve Bank's machinery of control and inspection had been perfected and a sufficient number of banks had been licensed under the Banking Companies Act a committee of experts should be appointed to go through the question

The issue had also been considered by the Shroff Committee (Committee on Finance for the Private Sector) This Committee recommended the establishment of a scheme of deposit insurance on the lines obtaining in the United States to strengthen the banking system and to increase the confidence of the public A detailed scheme on the lines of the F D I C was drawn up by the members of the Committee But the scheme did not receive further consideration from the Reserve Bank of India at that time The failure of the banks mentioned above brought about some rethinking on this question Voices from many sectors began clamouring for deposit insurance In his speech at the Thirty third Annual Conference of the Indian Institute of Bankers (Sept 1960) Mr H V R Iyengar,

Governor of the Reserve Bank of India, declared that a scheme for the insurance of bank deposits was being actively considered by the Reserve Bank of India in collaboration with the banking community Then, in November this year, Mr Iyengar announced that the condition of the banking industry was quite sound and there was no need for deposit insurance in India at present

Yet there are reasons to believe that the issue has not been given due consideration For, the case of the Palai Bank has proved that the bank ing situation in this country is not as perfect as could be wished An apparent soundness may conceal real weakness The Palai Bank had been shown as earning profits For some years up to 1953 it had been declaring dividend at the rate of 6 per cent For the subsequent three years, the rate of dividend was 4/5 per cent No dividend was paid in 1958 and 1959 because the Bank had been incurring some losses Actually its posi tion was steadily deteriorating from 1951 The dividend accorded to shareholders was nothing but a camouflage to hoodwink depositors It has since been brought to the notice of the public that the bank had been making many advances which could not pay off even the interest rates These unrealisable interests were shown as profits, dividends being distri buted on their basis each year Then these interests were added to total advances Depositors require closer protection against such malpractices It cannot also be denied that failure of the Palai Bank has shaken public confidence in the banking system Although this incident has not prompt ed widespread runs on banks, yet its immediate effect was panicky with-drawals of cash from the second biggest joint stock bank in India, viz the Punjab National Bank The Finance Minister himself had to assure depositors that the condition of that bank was quite sound Only the other day the same story was repeated with the Indian Bank It would be unwise to overlook all these cases of lack of confidence on the part of depositors

IV

The grounds for deposit insurance may, therefore, be examined in greater detail The public demand for a scheme of deposit insurance reflects a desire for greater personal safety on the part of individual depositors — specially the middle class depositors It is this desire for personal security that led to the establishment of the F D I C in the United States in an age of instability and insecurity all around From this point of view it is a scheme of personal security just like unemployment insurance or old age pensions, etc Safety of one class of depositors or reduction of risk in one particular sector of the economy in itself cannot be a sufficient ground for imposing an additional burden upon the community Much will depend, therefore, upon whether the scheme of deposit insurance is self supporting or whether it cannot be conducted without financial help of the Treasury

Deposit insurance however, has a wider social purpose behind it

Commercial banks are different from other financial intermediaries in that their liabilities serve as the circulating medium of the country in a more direct sense than any other financial asset A period of overall lack of confidence in the banking system results in hasty withdrawals of deposits from banks The banks are faced with tightened liquidity position As a remedy they start disposing of their assets This brings about a fall in their demand liabilities and hence in the volume of circulating medium of the country This approach of deposit insurance aims at preventing deposit withdrawals which result from lack of confidence in one bank in particular or in all commercial banks This aspect of the scheme is preventive in character It aims at minimising loss of confidence and preventing a run on a bank The need for such a measure cannot be overstressed in a country like India where the confidence in banks even in normal times is not of a very high order It must also be admitted that no bank however sound can withstand sudden loss of confidence or hasty withdrawals of cash for long As has been stated by a Chairman of the Board of Governors of the Federal Reserve System Deposit insurance contributes to confidence in our banking mechanism by the assurance it gives to small depositors of the availability of their funds We believe that the Federal programme of bank deposit insurance has made a notable contribution to banking stability (Statement by Thomas B McCabe Chairman Board of Governors of the Federal Reserve System)

The second aspect of deposit insurance is a remedial one It aims at maintaining the volume of circulating medium in case of a bank failure Insured depositors are supplied with cash or deposits in other banks to the extent of their insured deposits within a few days of the failure of an insured bank before liquidation proceedings are being conducted So there is no question of freezing of deposits even for a short period In this way the volume of circulating medium is maintained

The effectiveness of the first role of deposit insurance depends upon the extent to which depositors have complete faith in the solvency of the insuring organisation and refrain from withdrawing deposits from a bank which they think may possibly fail Unfortunately in a period of general lack of confidence the want of confidence is not concentrated to the banks only but is extended to all other financial institutions

Strictly speaking the risk of bank failures does not form an insurable risk As has been pointed out by H Jones (Article in the *Economic Journal* 1938 Insurance of Bank Deposits in U S A) the major factor militating against the insurability of this risk is the catastrophe hazard involved Most bank failures are concentrated within a particular period It cannot be presumed that the experience of the past will be repeated in the future So the risk is not calculable for insurance

When the F D I C was set up insurance men objected to calling it deposit "insurance since no attempt was made to charge weaker banks a higher rate than stronger banks Conservative bankers claimed that equal

treatment would lead to competition among banks in slackness in the granting of loans They said that the bank with loose credit policy would get business and the bank with cautious credit policy would lose it

It is also necessary to bear in mind that a scheme of deposit insurance, while it may remove the immediate cause of bank failures, viz panicky withdrawals of cash, does not thereby remedy all the diseases of the banking system It may act as a palliative to the loss of confidence, but does not thereby remove the causes which create this loss of confidence Hence the introduction of an insurance system does not as such, commonly make socially more desirable the reduction of the chance or the contingency which is insured against Provision of fire-fighting equipment is not made socially more desirable or necessary because a fire insurance company comes into existence Indeed, the society might find it more desirable to go into more extreme lengths to avoid loss from fire if fire insurance companies did not exist than if they did exist' (Jones article in the *Economic Journal*, 1938, p 705) It has been argued, therefore, that a scheme of deposit insurance in India may lull both the Reserve Bank of India and the depositors into a false sense of security, thus hindering a proper exercise of caution on the part of both

In spite of all these theoretical arguments against deposit insurance, the most convincing argument in its favour is the remarkable success achieved in practice by the F D I C in U S A After founding of the F D I C bank failures dropped sharply As early as the middle of 1934, 87 per cent of all banks were insured and on 13 May 1936 43 per cent of all deposits were insured This much protection contributed greatly to renewed confidence in banks Confidence was restored not only in the insured banks but also in the non insured banks We may have some idea of the situation from the following table

TABLE 2

BANK SUSPENSIONS 1934 48 *

Year	*Insured members F R S*	*Insured non members F R S*	*Uninsured Banks*	*Total*
1934	1	8	48	57
1935	4	22	8	34
1936	1	40	3	44
1937	6	47	6	59
1938	2	47	6	55
1939	7	25	10	42
1940	1	18	3	22
1941-45	6	12	4	22
1946	0	0	0	0
1947	0	0	1	1
1948	0	0	0	0
Total	28	219	89	336
1921 29 annual average for purposes of comparison				635

* Kemmerer E W *ABC of the Federal Reserve System* Table 16 p 127

It is difficult to assess the contribution of the F D I C to this excellent record Almost the entire period of the corporation s existence has been one of rapidly expanding bank credit, generally rising prices and expanding business activity. The violent bank upheaval of the 1930 s weeded out many unsound banks Bank supervision has greatly improved Financial developments too, particularly the enormous and continuous growth of the public debt over the period up to 1946 and the stabilisation of the government security market by the Federal Reserve System, have permitted banks to acquire a larger proportion of liquid assets than was the case in the earlier years There is still ground to believe that a large part of the improvement in banking treods was due to the establishment of the F D I C Among other reasons, the establishment of the F D I C was the immediate factor while most of the other factors evolved only gradually over time Secondly, the confidence of the banks in the F D I C is substantiated by the fact that by 1945, 95 per cent of all commercial banks were insured

The corporation has largely strengthened its financial position and the insurance scheme has been proved to be self supporting According to the Annual Report of the F D I C for the year 1949, during the 16 years after its establishmeot, the corporation had been able to repay the 289 million dollar contribution to the capital made originally by the Treasury and the Federal Reserve Banks It had also built up an insurance fund of 1 25 billion dollars The deposits in the insured banks increased four fold since 1934 and totalled 153 billion dollars at the end of 1949 for 104 million accounts, 96 per cent of which were fully insured under the $5 000 maximum Insured deposits amounted to half of the total deposits The deposits of 13 628 banks were insured by the corporation on 31 December 1949 In 1950, assessments of premia were adding more than 100 million dollars a year to the fund

The F D I C s record of achievements has reached near perfection because, apart from its insurance corporation function in case of liquidation, it is empowered to deal with banks in difficulty in a very effective alternative manner These powers permit the corporation to grant loans and to purchase assets for the purpose of amalgamating the distressed with stronger banks This procedure has resulted in much smaller losses than would have come from outright liquidation proceedings and consequently required less recourse to the insurance fund

Another merit that can be claimed for deposit insurance is that it ensures a closer supervision of banks The supervisory functions of the F D I C revolved round the insurance of deposits of banks that are insured and the termination of the insurance The supervisory functions of the F D I C relating to State insured banks parallel to some extent the functions exercised by State authorities and as to national banks and State member banks duplicate to some extent the functions of the Comptroller of the Currency and the Federal Reserve System These duplications of authority in bank supervision sometimes lead to much confusion and delay, no doubt How

ever duplication in practice is largely avoided by co operative arrangements

The utility of duplicating the supervisory agencies in India may be questioned when such wide powers of supervision and inspection are already possessed by the Reserve Bank of India It is true that the statutory powers granted to the Reserve Bank are so extensive that bank failures should not occur in India under normal conditions If however the Reserve Bank fails in its duty there must be some second line of defence The Palai Bank incident is a case in which the Reserve Bank could not fully absolve itself of the charge of non fulfilment of duty In spite of all legal provisions it took that authority nine years to realise that the condition of the Palai Bank was hopeless and the earlier it was liquidated the better A deposit insurance corporation may provide that second line of defence Unsound banks may be expelled from the Fund or their liquidation ordered Insurance may further be refused to banks which do not serve the convenience and needs of the economy The corporation may also facilitate the merger or consolidation of an insured bank by making a loan to the purchasing bank

As regards the charge of duplication of authority we can quote a statement by the staff of the Federal Reserve Board—the wide powers granted to the F R S "deal only indirectly with one of the casual factors which in the past have greatly aggravated cyclical developments viz panic withdrawal of deposits Deposit insurance is the system set up to prevent that considerable part of a liquidating process which is due to the panicky withdrawal of funds by the general public (*Federal Reserve Bulletin* Feb 1950 p 153)

The case for deposit insurance in India can be made on another ground as well The majority of depositors or would be depositors in our country are not in a position to judge the soundness and integrity of a bank A scheme of deposit insurance will afford some protection to this class of depositors Possible lack of vigilance on the part of these depositors if bank deposits are insured need not be a very great hindrance to any scheme of insurance of bank deposits at least in our country

The success of a scheme of deposit insurance will depend upon the range covered by such an organisation A deposit insurance corporation cannot be self supporting if only the smaller banks participate in it The premia collected from these banks will not amount to much On the other hand it is these banks which show a higher rate of failures Unwillingness of bigger banks to join the scheme will be the biggest hindrance to its operation Many of the bigger banks in India are against insurance of bank deposits as they feel that they are not going to gain much by it Their stronger assets and capital structure and the greater public confidence enjoyed by them have put them in a secure position The proportion of deposit accounts covered by insurance in their case will be smaller than in the case of smaller banks because bigger banks usually function with bigger deposits Yet they will have to pay premia on all deposits

not just insured deposits The cost of deposit insurance for them will be more than proportionate to their gains Indirect benefits of large banks however more than outweigh their proportional contribution in a scheme of deposit insurance The annual premia in respect of insurance of deposits need not be prohibitive if these banks reduce their interest rate on fixed and savings deposits by a very small percentage (say 0 1 per cent) and pay their premium out of it Indian banks in their scramble for deposits are today paying much higher rates of interest than could be justified by their capital structure

All these arguments point to the utility of introducing a scheme of deposit insurance in India There is however a very big if The insurance system will come out successful only if people have full confidence in the insuring agency In underdeveloped economies it is very difficult to secure full public confidence in the institutions of the money and capital markets A deposit insurance corporation must prove itself worthy of that confidence

AMITABHA SEN

Risk Bearing and Expenditure Tax

Introduction

AMIDST THE many virtues of an expenditure tax Kaldor in his book *An Expenditure Tax* has also counted in its alleged neutrality with respect to risk taking In this paper I shall try to show that so far as financial investment is concerned there is no reason whatsoever why an expenditure tax shall not discriminate against risk taking at all Nevertheless under some circumstances a switchover to an expenditure tax from an income tax may promote risky investments But such instances would not be frequent enough so that we can make a general case out of them To confine our problems within a managable limit I have made use of some simplifying assumptions without deviating from what seems to me the *basic* assumptions of Kaldor's book The more important of them are

(1) All savings are ultimately consumed The mere act of saving has no utility of its own and saved up resources derive their utility only from their consumption in future
(2) The level of real income is stationary [2]
(3) The form of taxation both under expenditure tax and under income tax is proportional [3]

The above three assumptions justify themselves by doing the necessary trick in reducing the formidable task of finding out an "equivalent tax rate to a mere routine Besides I have the feeling that neither a fast growing economy nor the presence of a class of investors who accumulate for its own sake create the proper atmosphere for studying a proposal for encouraging saving and risky investments As regards the third assumption I have only followed Kaldor's lead in this matter

I

According to Kaldor an expenditure tax as opposed to income tax will be neutral with respect to risk taking since an investor can always start

[2] *An Expenditure Tax* London 1955 Chap III The said chapter has gone through a minor qualification in a recent article (*Review of Economic Studies* June 1958 p 206) since every neutral proposition has been left unaltered
[3] This assumption is not absolutely essential but it helps to clarify the exposition of the than in the would be intuitively obvious
[4] We make no distinction between consumption and expenditure This may with bigger de another simplifying assumption

from a given position after the imposition of the tax by accumulating capital "without reducing his consumption at all by investing in more "high yielding securities and this process of "getting something for nothing will only stop at his earlier preferred position before the imposition of the tax"[1]

Kaldor seems to be aware that "more high yielding securities under his assumptions are also subject to greater risks and the investor described above is not really getting something for nothing but is only being compensated for the additional risks borne But what he does not take into account sufficiently is the changed nature of the additional income obtained for assuming greater risks after the imposition of the expenditure tax

To elucidate let us pursue the numerical example[2] given by Kaldor to prove his point

If we call the spectrum with 5 per cent interest A and that with 4 per cent interest B then A is definitely more risky than B and the investor has revealed himself to value this additional risk (I) more than the prospect of getting £500 extra (by not choosing A when a 50 per cent income tax is imposed) but (II) less than the prospect of getting £1 000 extra (by choosing A when no tax is imposed) which either just compensates or more than compensates the differential risks involved

Both £500 and £1 000 can either be spent or saved as one is net of tax and the other is free of tax Now when an expenditure tax is imposed the investor has a choice to take B and thus not subject himself to greater risks or to shift back to his original position A and save £1 000 extra as a compensation for bearing additional risks Kaldor argues that under such circumstances the investor cannot fail to choose A since £1 000 is sufficient to compensate for the differential risks involved Difficulties arise as soon as we recognise that if under expenditure tax the investor chooses B and saves £1 000 he can consume £1,500 and pay £1 500 in tax and the net difference in the two prospects A and B comes to £500 once again which is not sufficient to induce the investor to switch back to A More generally if the investor plans to spend any given amount within £0 to £2 000 the difference between the two prospects is always £1 000 saved more while if the investor plans in advance to save any amount from £0 to £4 000 the net difference between the prospects is the utility derived from consuming £500 more The explanation of the above paradox (as Kaldor himself points out in another context[3]) lies in the fact that while under income tax (or when no tax is imposed) any amount saved will not be taxed subsequently[4] under expenditure tax the tax liability is only post

[1] *Op cit* p 119

[2] *Ibid*., p 120 I assume that by an equivalent spending tax of a 50 per cent income tax he means an identical rate of tax on gross expenditure This is in line with an earlier example in the book (p 56 n 4) By gross expenditure we mean realized level of consumption plus tax payments (under expenditure tax) to maintain that level of consumption

[3] *Ibid*., pp 83-84 See also pp 133-34

[4] While when no tax is imposed even the interest earned on such savings will be tax free under income tax, this will not be the case Thus need not deter us for the present.

poned to a later period unless saving decision is renewed afresh in each succeeding year indefinitely If all savings are subsequently dissipated and if the tax rate remains constant throughout then in Kaldor's example the present value of £1 000 saved in terms of spending power is really £500

Kaldor however seems to imply that once £1 000 is saved it is converted into "safe income" and the investor may consume it in later period without bothering about whether the discounted value of his expenditure covers the risk price of the additional £1 000 income which by that time has become quite irrelevant Of course this may be a way in which a particular investor may behave more generally investors will evaluate the consequences of their decision to invest or not at a point of time when the risky character of the additional income is still relevant On the other hand if the man happens to be under some sort of money illusion he may be indifferent between £1 saved under expenditure tax and £1 saved when no tax is imposed though in terms of spending power the real value of the former is just the half of the latter But since this implies that the individual cannot compare the utility derived from £1 saved more and £1 consumed more even then we have no clear cut answer about whether A will be chosen unless we assume that when no tax is imposed the investor spends the identical amount irrespective of his choice of A or B[1]

It may be mentioned here that Kaldor has used the concept of an equivalent spending tax of an income tax in two different senses One is that of mathematical equivalence Thus an equivalent spending tax of 50 per cent tax on (gross) income is 50 per cent tax on gross expenditure and which works out to be 100 per cent tax on net expenditure More generally an equivalent spending tax rate of an income tax rate "t is t" on gross expenditure or $\frac{1}{1-t}$ on net expenditure For avoiding confusion we shall always call such an equivalent tax rate as identical tax rate on gross expenditure

The other concept of equivalent tax rate is that of logical equivalence namely the expenditure tax rate which yields the same revenue that the treasury realised under the given rate of income tax Since we are considering only proportional tax rates such an equivalent spending tax would not realise the identical amount of revenue for each individual that he was paying to the treasury before the changeover to such an equivalent tax As a result some will gain and others will lose This has presumably some relevance for risk taking too and we shall consider their implications in the next section Henceforward whenever I refer to equivalent tax rate we mean the above concept of equal revenue tax rate In the last section I shall try to justify the usefulness of such an equal revenue tax rate in connection with risk taking It may be also noted here that we

[1] *Op cit* p 119
[2] I leave it to the readers to find it out for themselves

have not followed Kaldor in spotting out this equivalent tax rate According to Kaldor, temporary savings cancel out in a stationary population and they cannot therefore, affect the revenue realised by the treasury This I believe to be wrong since while saving increases one's total tax payment under income tax, dissavings does not reduce it Secondly, if one portion of income is saved permanently, then the equivalent tax rate cannot be spotted out so easily as it is suggested by Kaldor by bringing in the concept of the representative saver This is because, once we switch over to an equivalent spending tax rate, permanent savings (in so far as they are never subject to taxation) will increase We naturally have to raise the tax rate further and thus will again increase permanent savings and so on

To spot out the equivalent speoding tax rate would be like chasing after will-o the wisp unless we reach a position when nobody is inclined to save further, permanently The first assumption was made primarily to avoid such pitfalls

II

In the preceding section, we have shown that for the investor in Kaldor's example, the switchover from an income tax to an identical rate of tax on gross expenditure does not affect, in any way, the additional reward of a more risky asset in terms of spending power For other persons, who unlike the Kaldorian investor do not consume under income tax the entire proceeds of his investment in the year it is earned [10] the above, however would not be true To bring this out clearly, let us assume all investors deposit the non-consumed part of their proceeds with a bank and both under income tax and expenditure tax, r is the rate of interest offered by the bank on such deposits [11] Now interest earned would also be taxed at the rate of t under income tax Then £1 saved for n years under income tax becomes $£(1-t)\ (1+r-rt)^n$, which is the net sum available for spending in $(n+1)$th year Under expenditure tax, the same pound accumulates to $£(1+r)^n$ and the net sum available for spending in this case is $£(1-t)\ (1+r)^n$.[12]

Thus the postponment of consumption of a given amount (net of tax) increases the net sum available for spending in future at the rate of $r\ (1-t)$ under income tax and at the rate of r under expenditure tax To put it in other words if y is the proceeds of a given investment, then under income tax, an individual may choose among any time pattern of distributing his expenditures, so long as the capitalised value of such expenditures

[10] *Op cit*, p 120

[11] This seems to preclude risky investments We, however, need only to assume that in evaluating the utility of a given income the income earner is guided by such an unique rate of transforming one unit of consumption in tth period into one unit of consumption in $t+1$th period, which appeals to him as a perfectly riskless investment, and in capitalising a given time-pattern of consumption he uses an identical rate of discount.

[12] t stands for income tax rate and for an identical expenditure tax rate By an expenditure tax rate, we shall always mean the rate of tax on gross expenditure

discounted at the rate of $r(1-t)$ equals $y(1-t)$ while under an identical rate of expenditure tax, he may choose among any way of distributing his expenditures so long as its present value, using r at the rate of discount, equals $y(1-t)$ So if the investor happens to be a temporary saver, then a switchover from an income tax to an identical rate of spending tax, will mean he can buy up an identical bundle of expenditures stream and yet retain a part of his disposable income unspent, since the capitalised value of that bundle of expenditures will fall short of his current consumable income as the rate of discount increases from $r(1-t)$ to r For a temporary debtor, i e one who antedates his expenditures by borrowing from the bank at the fixed rate of interest, the opposite will be true and for him the net sum available for expenditure under income tax will prove insufficient for buying up the same bundle of expenditures as before [13]

But an identical rate of spending tax will more often than not be different from an equivalent rate of spending tax, which yields the same revenue for the treasury in terms of discounted value [14] For the sake of simplicity let us assume that the entire revenue realised in any year by the treasury is deposited with the same bank and it has to pay no tax on the interest earned on such deposits For the treasury, therefore the rate of discount will always be r for arriving at the capitalised revenue out of a given income [15]

Assuming all savings are ultimately consumed the following results can then be easily deduced [16]

(1) If S_0 is the aggregated portion of Y consumed in the current year and S_n the portion of Y consumed in nth year then the total revenue realised out of Y (the aggregate income of all individuals) under income tax where t is the rate of tax will be $T_y = Y_t + (1-t)\sum_n \{S_n - S_n p^n\}$ where $p = \frac{1+r-rt}{1+r}$, a positive fraction The second term in the above sum allows for taxes on interest earned by temporary savers on the saved portions of Y minus the value of tax reductions enjoyed by the temporary debtors on all debts ultimately retired out of their shares in Y [17] Only when it cancels out the identical rate and equivalent rate will be the same

(2) If the expenditure tax rate is t' and the amount of revenue realised under expenditure tax is T_e then $T_e = Yt'$ whatever may be the distribu

[13] These are of course not new for those who have gone through pp 84-86 of Kaldor's book

[14] *An Expenditure Tax* p 121 n 1 We shall strictly adhere to this meaning of an equivalent tax rate

[15] We assume tax payments cannot be antedated

[16] In arriving at these results we have assumed that the interest earned (or paid) on savings are added (or subtracted) to the consumption of the principal in the year it is consumed

If the income of the temporary debtors after allowing for interest payments on his borrowings is negative in a year he cannot get the full value of the tax deductions at the rate of the tax on his interest payments We shall however neglect it Henceforth we shall regard antedating of consumption as postponment of it for a negative time period and the debt incurred for that as past savings out of current income

tion of Y among different income recipients and whatever may be their time pattern of expenditures

(3) For an equivalent tax rate t, $T_x = T_y$, hence because of (2), $t = \frac{T_y}{Y}$. If Y_i is the income of a given individual and T_i is the capitalised value of direct or indirect tax payments out of Y_i under income tax,[11] then $t' = \frac{1}{Y_i} \Sigma \frac{T_i}{Y_i} Y_i$ or the (weighted) average of $\frac{T_i}{Y_i} = t_i$ (say) for all individuals weighted by their respective incomes

(4) After the changeover to an equivalent tax rate t on expenditure, the net sum available for spending for a person with a given income Y_i, will increase, decrease, or remain the same according as $Y_i(1-t')$ is greater than, less than, equal to $Y_i - T_i = Y_i(1-t_i)$, *i e* the capitalised value of the time pattern of spending Y_i under income tax, discounted at the rate of r, or according as t_i for that individual is greater than, less than, or equal to t' the average of t_is

(5) For all persons for whom $t_i > t'$, the utility of Y_i will be greater under expenditure tax than under (an equivalent) income tax Let out of Y_i, X_0, X_1, X_2 , denote the respective amounts consumed under income in different periods Now the very fact of switchover to an expenditure tax will lead to a change in the time pattern of spending Y_i for all income earners (Optimisation over time requires that each income earner, by borrowing or lending will so adjust his consumption pattern, so that in equilibrium, his marginal rate of time preference between any two consecutive years, equals r under expenditure tax and $r(1-t)$ under income tax) Let Z_0, Z_1, Z_2 denote corresponding amounts consumed under expenditure tax It follows from (4) that any one for whom $t_i > t'$, can choose $\{X'_n\}$, $(n = 0, 1, 2, 3 \ldots)$ where for each n, $X'_n \geqslant X_n$ and not for all n, $X'_n = X_n$ So the vector $\{X'_n\}$ is on a higher level of utility surface than the vector $\{X_n\}$. Now $\{Z_n\}$ is either preferred to (or indifferent to if his preference field is only *weakly* ordered) $\{X_n\}$ So $\{Z_n\}$ is on a higher level of utility than $\{X_n\}$[12] But can we conclude from (5) that a switchover from an income tax to an equivalent expenditure tax will promote risk taking? To arrive at such a conclusion, we have to show in the first place that the willingness to postpone consumption is positively correlated with the willingness to take risk Besides, even if such a correlation exists, for an investor with $t_i > t'$, the utility of the safer alternation (like B) to the risky venture (like A) will also increase If we assume diminishing marginal utility of income, (or, for that matter, of consumption) the utility of $(A-B)$, *i e* of the reward of additional risk taking will be less from a higher level of utility than from a lower level of utility So we cannot

[11] Discounted at the rate of r as usual

[12] This will also be true for a person with $t_i = t'$ if we assume his preference field o be *strongly* ordered

even say whether the net increment to utility because of $(A-B)$ under expenditure tax will be greater than under income tax

Lastly if the utility of a given income is greater under expenditure tax, the prospect of losing the same amount will also have greater disutility under expenditure tax [20] The above consideration seems to me sufficiently strong

III[21]

When we compare the effects of alternative forms of taxation on risk taking we generally assume a given investment portfolio for the risk taker or the income wealth position of the investor is assumed to remain unchanged But a change in the form of taxation may seriously affect the income wealth position of the investor as well Now for some reasons I need not explain here at length so far as financial investment is concerned an augmentation of the size of investment portfolio may also lead to a leftward shift of the investment spectrum to greater risks so that investment like *A* will not only increase absolutely but also relatively at the cost of *B*

But the difficulty is that for a stationary population with its income level remaining stationary the aggregate temporary savings will be nil [22] So though just after the switchover to a spending tax total savings (hence investible fund) may increase total dissavings will also increase after a given lapse of time so that both savings and dissavings will attain equality once again but at a higher level Thus if an investor because of an increase of his total investible fund shifts to investments like *A* at a later stage of his life he has to liquidate such investments so that the net increase in the supply of and demand for risky investments will cancel each other out Only in a growing economy the supply stream will always lag behind the demand for (risky) investments and the significance of this lag may increase under expenditure taxes as regards risk taking But this we have ruled out in the very beginning [23]

IV

Different tax forms also reduce risks assumed by the investors in so far as the portion of the losses incurred can be passed on to the treasury in the form of a reduced tax bill Now an expenditure tax provides adequately for the carry forward of losses indefinitely to offset losses

[20] Of course here again from a correspondingly higher level of utility the disutility of risking the same amount may be less

[21] This section explores a possibility suggested by Kaldor himself Risk bearing and Income Taxation *Review of Economic Studies* June 1958 p 206 n 4

[22] Kaldor points out this on p 135 n 1 of his book But he misused it altogether for while saving increases tax payments under income tax dissaving does not reduce it.

[23] For similar reasons we ignore here that savings of the permanent savers may increase under expenditure tax

suffered in investments against his gains or other sources of income [24] For that the investor has only to reduce his consumption expenditure by the amount of his losses over as long a period as he may choose Now if the investor equals his total income (net of tax) with total expenditure, he cannot but fail to reduce his expenditures by the amount of his loss Thus an expenditure tax like an income tax with full loss offset reduces risk at the same rate as it reduces yield the only difference being while under income tax all sorts of adjustments are to be made by the tax collecting authorities under expenditure tax they are to be made by the tax payer himself

Assuming perfectly safe investments do not bring any return an expenditure tax rate will not affect the return per unit of risk of any investment Thus Kaldor's hunch seems to turn out to be right after all! But an imposition of the expenditure tax (or an increase in the rate of taxation of it) will also reduce the income of an investor and thus brings in further complications

Suppose before imposition of the tax the investor in equilibrium chose an investment spectrum the rate of return and the rate of risk of which are y and r respectively Writing U for utility V for disutility and using suffix notation for partial derivatives $\frac{U_r}{V_r} = \frac{y}{r}$ [25] for that investor

Now after the imposition of an expenditure tax both y and r are reduced at the rate of the tax so that the relative price of y in terms of r remains unchanged But since the income of the investor is also reduced both the marginal utility of the yield (U_r) and the marginal disutility of risk (V_r) may change and if the latter changes more than proportionately in relation to the former $\frac{V_r}{U_r}$ in the new situation will increase so that the investor will require a higher rate of yield to compensate a given rate of risk

Assuming diminishing marginal utility of income once again a reduction in income will increase the utility of a given amount of yield but it may also increase the disutility of a given amount of risk It is the failure to recognise this that led Domar and Musgrave to the paradoxical result that total risks will necessarily increase after a full loss income tax is imposed [26] Assuming the investor's wealth to remain unchanged they argued that since the imposition of a full loss offset income tax reduces the investor's income he will try to take more risk to maintain the same level of income [27] But if his income is reduced he may show greater reluctance to expose his capital to risk as well As Kaldor points out while reduction in income

[24] This has also been pointed out by E Cary Brown "Mr Kaldor on Taxation and Risk bearing" *Review of Economic Studies*, p 51

[25] This is the increase in the rate of yield, required to compensate the investor for a small increase in the rate of risk.

[26] Domar E V and Musgrave, R A., "Proportional Income Taxation and Risk taking" *Quarterly Journal of Economics* May 1944 pp 388-92

[27] *Ibid*, p 390

will make people work harder, the effect on risk taking will normally be the other way round [28]

The more rigorous proof given by them also suffers from the same defect They claim that their conclusion follows immediately once we assume diminishing marginal utility of income [29] But the second property of their indifference curve cannot be deduced from diminishing marginal utility of income alone Kaldor on the other hand believes that all tha three assumptions on p 402 are required for this proof [30] This is not quite correct since the slope of their indifference curves is U_y/V_r, its partial derivative with respect of y when r is constant will be negative if $U_{yy}<0$ and $V_{yr}=0$ The first follows from diminishing marginal utility of income (their first assumption) and the second follows from their third assumption on p 402 But as we have argued V_{yr} will also be negative [31]

Furthermore if we stick to the Kaldorian assumption that a reduction in income will as a rule discourage risk taking an expenditure tax inspite of its full loss offset character will discriminate against risk taking But since personal income taxation with full loss offset provision can hardly be reconciled with the present day income tax practices a switch over from an income tax to an expenditure tax may be expected to increase the relative price of yield in terms of risk for a purely financial investor But here again what the investor gains the treasury loses in the form of a greater share in the total risk

V

Besides one or two considerations in its favour the switchover to an expenditure tax does not appear to hold very bright prospects for promoting risky investments But this may be due to our obsession with the concept of equivalent tax rate i e our desire to equate the revenue realised under alternative forms of taxation Now if we assume that a public investment is an increasing function of the revenue realised and what the investors as a class gain the treasury loses then private investment will only be encouraged at the cost of public investment This may of course promote risk taking but once the treasury is ready to sacrifice a part of its revenue a host of other incentive schemes for promoting risky investments become available for consideration It is not the purpose of the paper to enter into a pedantic discourse on the relative merits and de the initial administrative cost of switching over to an expenditure tax it the initial administrative cost of switching over to an expenditure tax it turns out to be a very simple and elegant built in incentive tax system

[28] *An Expenditure Tax* p 110
[29] Op cit pp 403 412 n 9 and p 413 n 1
[30] Risk bearing and Income Taxation *Review of Economic Studies* June 1958 In this he is at one with E Cary Brown *op cit* pp 49-50
[31] It may be pointed out the first property of their indifference curves similarly requires that $U_{ry}=0$ which again follows from their third assumption

In the first place it automatically operates as a full loss offset tax system. Secondly it does away with the discrimination against fluctuating income of a progressive income tax A progressive expenditure tax suffers from no such defect as an individual by evening out his consumption expenditure can avoid an unnecessarily higher rate of marginal taxation As the financial investors in risky venture playing a mixed game of skill and chance have to face periods of occasional losses and high profits alike, discrimination against fluctuating income will mainly hurt them Thirdly as Kaldor himself points out it makes the obnoxious system of corporate income tax rather redundant This may also act as good effect on the real investors psychology Lastly it works as a convenient form of encouragement to that particular class of investors which accumulates for its own sake and regards the savings of the society as a saved trust not to be dissipated in unproductive consumption

SUPPLEMENTARY NOTE

Since I wrote this paper I came across an article by Irving Fisher Paradoxes in Taxing Saving *Econometrica* April 1942 Vol 10 No 2 In that article Fisher considers two hypothetical ways of taxing a real investor The above two ways correspond to a proportional expenditure tax and income tax as considered by us Since he considers a real investor he does not equate the rate of return on saving (or investment) with the rate of discount which is presumably determined by the market rate of discount For a financial investor the two rates may be assumed to be equal For the treasury however there may be little justification in using the market rate of interest for deriving the present value of realised revenue It may be however argued that Re 1 realised now may be used for retiring public debt of Re 1 In so far the failure to realise revenue now will compel the public authorities in floating public debt and assuming further that the rate of interest on government securities is equal to r the market rate of interest r may also be used by the treasury as a rate of discount under income tax as well as under expenditure tax But the public authorities may directly resort to net money creation too Besides the government is also a real investor and the average yearly rate of return on public investment may be greater than r

So from a strictly economic point of view the rate of discount relevant for the public authorities may deviate from the market rate of discount This may also lead to many paradoxes as the rate of discount relevant for the financial investor is his marginal rate of time preference which in equilibrium must be equal to r In my paper I implicitly assumed that the rate of interest r is not affected by the switchover from income tax to expenditure tax Now I see that r may be reduced just because of the increased supply of savings (or as the necessity for capitalising the taxed portion of interest payment under income tax being wiped out) under expenditure tax and this may promote risky (or not so-risky) investments

if they are interest elastic But if all savings are temporary savings then there will be only an once for all spurt in total savings (and total risky investments) in a stationary economy as considered by me

In a growing economy as I mentioned in my paper even if a fixed portion income is saved temporarily total savings may be rising for ever But in a growing economy the average expectation of any income earner is a rising income trend—and this is not favourable for postponment of consumption (see *Planning and the Plans* by A Dasgupta and others pp 104 05)

ANINDYA DATTA*

Japanese Scholarship and Growth of Industrialism—A Note

CUTTING ACROSS all the controversies over the role of entrepreneurship in the emergence of industrial capitalism is the fact that the final shift in favour of formation of industrial capital, occurring in the historical transition from feudalism to capitalism, consists in or is conditioned by a decisive shift in assets preferences, so that the surplus is accrued thereupon predominantly in the form of profits from manufacture through employment of wage labour rather than in the forms of rent, interest and trade margins (mercantile profits on alienation from petty producers).

Mere knowledge of this broad and sweeping fact, which is really but the epitome of the outcome, however, gives little insight into the working out of the transitional stresses and tension Thus, when Maurice Dobb underlined this broad fact quite early in his career of an economist, he did signal service to dispel ahistorical tendencies, but, for all that, he could only touch upon the fringe of the problem

In England the two hundred and odd years which separated Edward III and Elizabeth were transitional in character Dobb characterised this period thus 'The disintegration of the feudal mode of production has already reached an advanced stage before the capitalist mode of production developed and thus disintegration did not proceed in any close association with the growth of the new mode of production within the womb of the old" (*Dobb, Studies in the Development of Capitalism*) In attempting to analyse the processes of development during this transitional period, Dobb, like many others, was indebted to Marx for his famous classification of the 'two ways' of capitalism "According to the first—the really 'revolutionary way'—a section of the *producers* themselves accumulated capital and took to trade, and in course of time began to organize production on a capitalist basis free from the handicraft restrictions of guild According to the second, a section of the existing merchant class began to 'take possession directly of production' thereby 'serving historically as a mode of transition', but becoming eventually 'an obstacle to a real capitalist mode of production and declining with the development of the latter'" (*Ibid*)

This general thesis has remained a main element of Dobb's *Studies* Yet he could not apparently carry the analysis far enough This was due to the fact that, on the one hand, he could not extend and apply to the field of agriculture the theory of the two ways and, on the other, he

* Formerly Ford Foundation Research Fellow, Department of Economics University of Calcutta, now, Lecturer, Department of Economics, University of Burdwan

got himself bogged in a rather unrealistic theory of original accumulation Both these failures were of course interdependent Before we turn our attention to the genesis and outcome of these failures we shall do well to consider at certain length the fallacies involved in the analyses of those who failed to take proper cognisance of the two ways

Nef and Sweezy may be taken as belonging to this latter group Thus Sweezy writes If we interpret Marx to mean that the really revolutionary way was for those with disposable capital to launch full fledged capitalist enterprises without going through the intermediate stages of the putting out system we shall I think have little difficulty in finding a wealth of evidence to support his contention Nef has shown conclusively (of course without any reference at all to Marx) that what he calls the first industrial revolution in England (about 1540 to 1640) was very largely characterized by precisely this kind of investment in such new industries as mining metallurgy brewing sugar refining soap alum glass and salt making economic supremacy over all rival nations and the first bourgeois political revolution (Sweezy *Transition from Feudalism to Capitalism*) Thus Sweezy turns the theory of the two ways into the question whether the same commercial capital transformed into large capitalistic enterprise directly or through the putting out system This was obviously an egregious misconstruction The full fledged capitalist enterprise mentioned by Sweezy (quoting from Nef) in support of his own interpretation or the big manufacture was a privileged manufacture based on the Patents of Monopoly granted by the absolute monarch under protection offered by such absolute monarch in which the courtier capitalists and big commercial capitalists relying on the prerogative of the absolute monarch tried to deny the producer chances for rising up in status European as well as Japanese scholarship has decidedly rejected the interpretation of the privileged manufacture as made by Nef and Sweezy The controversy over monopoly which steadily aggravated in the early years of the seventeenth century was in essence a struggle staged by small bourgeois classes against the monopoly in the hands of these courtier capitalists and big commercial capitalists or big privileged manufacture which was to develop into an open denial of the prerogative of an absolute monarch upon which such monopoly was based and afford a factor for the eventual shaping of a bourgeois revolution (Dobb *op cit*) The privileged manufacture naturally represented the antirevolutionary force while the small bourgeois directing the extensive movement aimed against such monopoly represented the really revolutionary force If the Nef Sweezy interpretation were correct Cromwell's revolution would have been a revolution directed from above and there would have been no bitter class struggle as is actually recorded in history It was a good thing therefore that Dobb always placed at the foreground the two ways of capitalism

Dobb however seems to have been inaccurate or inadequate when he

came to the question of original accumulation This was, however, (as has been mentioned earlier) really a consequence of his failure to extend or apply to the field of development in agriculture the theory of the two ways This point has been competently brought out by Japanese scholarship.

Dobb sees the process of original accumulation as involving two quite distinct phases. First, the rising bourgeoisie acquires at bargain prices (or, in the most favourable case, for nothing, e g , the Church lands under Henry VIII) certain assets and claims to wealth In this phase, wealth is not only transferred to the bourgeoisie, it is also concentrated in fewer hands, and, later, comes the realization phase *Dobb* writes that of no less importance than the first phase of the process of accumulation was the second and completing phase, by which the objects of the original accumulation were realized or sold in order to make possible an actual investment in industrial production a sale of the original objects of accumulation in order with the proceeds to acquire (or to bring into existence) cotton machinery, factory building, iron foundries, raw materials and labour power" (Sweezy, *op cit*) Dobb's theory that two phases exist in the original accumulation—one of accumulation of non productive assets and another, at a later time, of their 'realisation through exchange for productive factors or means of production and labour power does not present a realistic picture

The genesis of Dobb's stepping into this wrong track seems to be his failure to comprehend all the ramifications of capitalist developments in agriculture in the period between the middle of the sixteenth century and the early part of the seventeenth According to Dobb, this period was one of disintegration of the feudal mode of production and was never one of realisation of the capitalist mode of production The rising bourgeoisie, according to him, invested into non productive assets, especially lands, the money they had accumulated as commercial capital or usury capital and thus set on in the Tudor age the process of assimilation between merchant nobility and money-nobility, on the one hand, and landed nobility, on the other Having viewed the matter in this simplified manner Dobb was left to come out with a *deus ex machina*—his "theory of realization involving the sale of lands by merchant nobility, money-nobility and landed nobility

It never actually happened, however that the merchant-nobility, money nobility and landed nobility as a distinct class entity *sold their* lands at a certain point in history What they did as such a class entity was the eviction of farmers from the lands they had accumulated and the pasturing as landowners on the waste lands The first "enclosure movement' started in the middle of the fifteenth century and represented the change of feudal lords into capitalists or junkers This is the so called 'Prussian style" way—a type of development which corresponds with the early monopoly starting in the Elizabethan period, the way of "merchants turning into producers' Indeed, both these were closely

interconnected

There was another enclosure, however proceeding at the same time This was the useful enclosure as distinct from the harmful enclosure i e the one mentioned above It was performed by well to do farmers or yeomen in a steady though relatively unostentatious manner over their neighbours lands Agricultural management was steadily expanded by hiring neighbours and the distinction between well to do farmers and destitute farmers was steadily growing This was the so-called "American style way which partook of the nature of the really revolutionary way in manufacture As a matter of fact, these two were closely interlinked

The fifteenth century (Tudor ages) saw inflation (rise in wool prices etc) and increasing economic difficulties for the feudal lords and the conflict between the two types of original accumulation was accordingly sharpened It was not as if (as Dobb surmised) the capitalist mode of production was suddenly realised in the middle part of the sixteenth century Two original accumulations two capitalisms were then in a more or less clearly defined conflict The rebellion led by Robert Kett in 1549 substantiates this statement (Hideichi Hone *Kyoto University Economic Review*) While the enclosure by rich farmers involved seeds for class conflict between them and destitute farmers both in relation to the pressure being exerted by feudal lords had to stand on the common ground and co operate closely Thus the Kett rebellion was strongly tinged by anti enclosure movement The process of development was started by the enclosure by feudal lords followed by movement opposing this and by the early monopoly followed by movement against it This lasted up to the bourgeois revolution started in 1640 while at the root of these developments was a sharp conflict between two opposing groups one involving merchant nobility money nobility and landed nobility and the other consisting of well to do farmers and small bourgeoisie In other words this was the confrontation of two original accumulations When well to do farmers and small bourgeoisie wrested powers from merchant nobility money nobility and landed nobility the confrontation between the well to do farmers small bourgeoisie and destitute farmers (semi proletariat) came to the fore Such was the conflict between Cromwell and Leveller Digger (*Ibid*)

From the above discussion it should follow that some insight into the Prussian style way and the American style way in agriculture corresponding to the second way and first way in the field of manufacture provides a most important key to the understanding of the issues involved in the rise of industrial capitalism One of the characteristics of the agricultural scene in India has been that contrary to the principle laid down by Sombert Pirenne Sweezy and others commercialisation and monetisation have often gone hand in hand with preservation of old forms of production and non economic compulsions (see appendix A) Preponderance of financial and other holdings in the topmost income

group and distinct non industrial orientation of assets preference is another overwhelming fact up to the present day (see appendix B) The new land laws have placed the whole countryside in a state of flux The scale of evictions in the recent past consequent upon the introduction of the new laws was compared by distinguished authorities with that experienced in England in fifteenth sixteenth century Things are yet changing and taking new forms The whole gamut of events must be taken together The surveys conducted by our government and the different institutions must throw light on the courses of development along the two ways in manufacture as well as agriculture, if they have to be useful in indicating the true nature and shape of things to come Japan and Germany are examples of the second way of capitalism while England and France are the classical example of the first the really revolutionary way It is not fortuitous that democracy could never quite strike root in the former The two ways are locked in a crucial struggle throughout the Indian scene The nature and space of development of industrial capitalism in India as well as the future of democracy will be largely determined by the outcome of this struggle

APPENDIX A

SOME PECULIARITIES OF THE AGRICULTURAL SCENE IN INDIA

TABLE I

FAMINE DEATHS IN THE 19TH CENTURY

Period	1800-25	1826-50	1851 75	1876 1900
Number of Famine-deaths	1 000 000	500 000	5 000 000	26 000 000

SOURCE William Digby

Dissolution of the forms of non economic compulsion on labour and change over from the pre-capitalist stage of production to the stage of production based upon free labour market are brought about by a rising demand for labour relative to supply following expansion of productive forces at a rate faster than growth of population Black Death among other factors synchronised with the changes in the agrarian system of England It may appear paradoxical however that the famine deaths of nineteenth century did not hasten the dissolution of non economic compulsions on labour in Indian agriculture Permanent Settlement and its paraphernalia worked in the opposite direction Some explanation of this phenomenon must be the destruction of village handicraft and the consequent falling back of the rural population upon agriculture Part of the explanation is also to be found in the peculiar circumstances in which monetisation and commercialisation proceeded in the Indian countryside. The demand for money was artificially grafted by the land revenue system initiated by foreign imperialism In the absence of handicraft the Indian peasantry turned into pawns in the hands of metropolitan and international commerce

George Blyn's statistics and Daniel Thorner's analysis go to show that monetisation and commercialisation of the economy during the fifty years ending in 1945 46 coincided with complete stagnation in agricultural productivity and perpetuation of age-old conditions of production The report of the Rural Credit Survey substantiates the same proposition for the more recent period

TABLE 2

RELATIVE NET INVESTMENT (+) OR DISINVESTMENT (−) OF UPPER AND LOWER STRATA CULTIVATORS BY LEVEL OF MONETISATION AND COMMERCIALISATION

(figures in regional average Rs per family)

Regions	*Net investment (+) or disinvestment (−)*	
	Upper strata	*Lower strata*
(1)	(2)	(3)
Subsistence	+72.5	−10.3
Monetised	+87 7	−25.5
Monetised and commercialised	+83 0	−50 7

The above table was constructed from tables given in the *Rural Credit Survey Report* by Shri J K Sengupta and included in his article in the *Indian Journal of Agricultural Economics* Vol XII No 7 It shows that the lower strata cultivators disinvest in all regions magnitude of the net disinvestment rising to about 2½ times and 5 times in the two areas termed monetised and monetised and commercialised" respectively This of course, points to the increasing destitution and expropriation of the lower strata and accumulation of property in the hands of the moneyed interests as the pace of monetisation and commercialisation grows It is important to note however that magnitude of net investment for the upper strata cultivators does not vary so much with monetisation and commercialisation

TABLE 3

RELATIVE CONCENTRATION OF LAND AND PROPORTION OF AGRICULTURAL LABOUR

	North India	*East India*	*South India*	*West India*	*Central India*	*North-West India*
Percentage of land owned by households owning 25 acres and above	14 65	11 92	30 20	45 18	48.31	48 30
Proportion of agricultural labour to all rural households	14 3	32 7	50 3	20 4	36 7	9 8

SOURCE Agricultural Labour Enquiry Vol I Report on Landholdings N S S 8th Round (from article by B Chatterjee *Enquiry* No 2)

Correlation between the degree of concentration and the degree of the proportion of agricultural labour is negligible (0 03) Since the form of employment of labour is one of the important indicators of the mode of production we are led to conclude that higher concentration of land does not carry with it the implication of higher capitalisation in India Agricultural labour in India as Dr S J Patel points out is rather related to the form of land tenure being highest in the Ryotwari areas and lowest in the Permanent Settlement areas It is more an offspring of legal constraints than economic factors

TABLE 4

COMMERCIALISATION AND THE FORM OF EMPLOYMENT OF LABOUR

(proportion of population in commerce, in urban areas and proportion of area under share cropping)

States	*P C of population in commerce*	*P C of population in urban areas*	*P C of cultivated area under share cropping*
(1)	(2)	(3)	(4)
West Bengal	9 3	24 80	22 0
Punjab	9 1	15 09	21 5
Bombay	7 6	23 92	30 6
Madras	6 7	15 97	13 2
U P	5 0	12 46	10 7
Bihar	3 9	5 37	10.2

SOURCE Ghosh A *Dr Journal of the Manchester School of Economic and Social Studies*, Vol XXIII No 2

Process of commercialisation and urbanisation is coterminous with the process of monetisation of agriculture and the above table shows high positive correlation between urbanisation commercialisation and percentage of cultivated area under share-cropping

TABLE 5

PATTERN OF TRADING IN RELATION TO SHARE CROPPING

States	*P C of area shared or leased*	*P C of marketable surplus of foodgrains handled directly by*	
		Cultivators	*Traders, wholesalers, mill owners and their agents*
(1)	(2)	(3)	(4)
Bombay	30 0	32 0	68 0
West Bengal	22 0	30 0	70 0
E Punjab	21 5	38 0	62 0
Madras	13 2	38 1	61 9
U P and Bihar	10 7 10.2	51 0	49 0

SOURCE *Ibid*

In the above table we find a high positive correlation between the percentage of cultivated area under share cropping or lease and the percentage of marketable surplus of foodgrains handled by commercial interests

The five tables cited above and the interpretations thereof should go to lay the basis for the presumption that commercialisation and monetisation in the Indian agricultural scene have often gone hand in hand with preservation (if not accentuation) of pre-capitalist mode of production and non economic compulsions

APPENDIX B

RATIO OF "FINANCIAL AND OTHERS" HOLDINGS TO "MANUFACTURING" AND OF INVESTMENT INCOME TO TOTAL INCOME AT TOP INCOME LEVELS

Income level	*"Financial and Others" to manufacturing (p c)*	*Investment income to total income (p c)*
(1)	(2)	(3)
30 001 and above	140 0	19 7
15 001—30 000	28 0	36 9

The above table was constructed by A Sen and B Chatterjee and included in article in *Arthaniti*, Vol III, No 1 It is based on the results of Survey of Owne of Shares and Securities—Bombay City (Pilot Enquiry), published in the R B I Bu for *February, 1955*

(The author is indebted to Shri A Sen and Shri B Chatterjee of the Indian Stati Institute for all the foregoing analysis)

Major References

1 Dobb, Maurice, *Studies in the Development of Capitalism*
2 Sweezy, Dobb, Takahashi, Hilton and Hill, *Transition from Feudalism to Capitalism—A Symposium*
3 *Kyoto University Economic Review* (articles by Hidechi Hone and others).
4 Article by Daniel Thorner in "Economic Growth in Brazil, India and Japan", edited by Kuznets

Growth and Cycles in Micro-Set-up

I

THIS paper is suggested a very simple model in which income distribu
n pattern has been shown to have not a very insignificant role in the
chanism of growth and cycle in the economy To insist on this how
er as the only cause would be going to the furthest extent of absurdity
The trade cycle and economic growth these are not single event so that logically there need not be more than one cause to bring this about In reality this is a composite event so that pending a full analysis of this phenomena known as trade cycle (and growth) we cannot be certain about the number of causes that would be required to bring this about. Since our problem is to trace the effect of a single cause we would accordingly begin by assuming that other known cycle making forces are not at work so that a full knowledge about the impact of the force on the economy may be gathered Of course such a procedure would reduce the degree of testability of the theory particularly when conducted experimentation is impossible in our science The assumption are listed below

(1) *The production period is uniform*
(2) *Income period is uniform*
(3) The rate of interest is institutionally fixed or its changes are inconsequential
(4) The firm which has been the base of our analysis is a representative one and produces a single commodity or types of commodities whose relative composition is constant
(5) Inventories do not change over the cycle
(6) Government's interference in economic mechanism is insignificant
(7) The economy is a closed one

Definition and Functions

1 *The demand function*

For the purpose of this essay we would hold demand for any commodity as a function of income alone Of course this is not to minimise the effect of relative price changes on the demand for a commodity but to take account of the fact that when income is steadily changing the effect of income is much more stronger than any other effect When the income does not change i e in a static framework we would undoubtedly

face the effect of changing relative prices on the demand for any commodity The Marshallian framework where demand for a commodity held as a function of price of that commodity alone has been based the explicit assumption that income and other prices are constant Marshallian price elasticity may be something real but it is not relevant in any analytical work since neither income nor relative prices remain constant When income changes all other forces which are supposed to influence the demand behaviours of consumers under static conditions are supposed and not great harm would be done if we neglect these other forces while studying the demand pattern under dynamic conditions [1]

2 *The supply function*

In order that supply function may be employed as a tool for analysis of real economic behaviour we have as well to define it exactly as the demand curve in terms of income Average cost curve will be understood accordingly, as the locus of the average cost per rate of output at any period of time Since the rate of output cannot be increased beyond the limit imposed by the capacity the average cost curve would be discontinuous beyond that point The terminal point on the average cost curve would be the most efficient point since this is the point at which the maximum utilisation of the capacity has been achieved The period referred to is the production period to be understood as the total utilisation time of the plant structure for the inputs to be completely processed [2]

[1] Note in this connection P Samuelson *Statistical Analysis of the Consumption Function* Appendix to Chap XI A H Hansen *Fiscal Policy and Business Cycle*

"Among the most striking uniformities yet uncovered in the economic data are the relationships between the various categories of expenditure and family income In fact so strong are the income effects that it is very difficult to find empirically the influence of price the variable customarily related to demand by economic theorist pp 250

Our reason for holding relative price change as having rather insignificant influence on demand behaviour is that we do believe following Duesenberry and others that people's tastes and preferences are widely influenced by the preference schedule of other persons in the society So strong is the influence that we can safely neglect the influence of price on consumption behaviour The influence of price on consumption pattern which is represented by price elasticity is based on the assumption that people's tastes and preferences are independent of one another This assumption of independence has helped in the postulation of the Marshallian market demand schedule If inter dependence is admitted we are no longer permitted to construct the aggregate demand curve In this connection reference may be made to Duesenberry *Income Saving and the Theory of Consumers Behaviour* O Morgenstern Demand Theory Reconsidered *Quarterly Journal of Economics* 1947 48 p 175, K W Rothschild The Meaning of Rationality *Review of Economic Studies* Vol XIV p 50

[2] Such a formulation of cost function is not however new in economics One can refer to P W S Andrews 'Theory of Individual Business' *Oxford Economic Papers* Vol VI No 1 p 54 ff and *Manufacturing Business* Macmillan and also Eiteman, Factor Determining the Location of Least Cost Point *American Economic Review* 1947 pp 910 ff and also discussion by Haines and Bishop in the same Journal, 1948 pp 607 ff and Eiteman's reply in the same Journal, 1949

For an empirical study of cost function under conditions of changing capital stock we can refer to J Johnson Statistical Cost Function in Electricity Supply *Oxford Economic Papers* Vol. IV Feb 1952 p 68 ff

Given a particular rate of investment (a particular plant structure) at period of time (a production period) there is a maximum rate of output that can be produced. *If in the succeeding period* the plant structure is enlarged following a higher rate of investment, we will have higher rate of output. If no improvement in the organisation is made the minimum point of the cost curve following the added investment need not be below *the preceding minimum point.* Neither, it would be higher, assuming for the purpose of this essay that there is no diseconomies of management.[3] If improvements are made, the new average cost will be lower than the earlier one. So long as, therefore, there is no improvement made at each level of investment we can join the average cost points and obtain a horizontal average cost curve which has been established in all enquiries including statistical cost curves.

When we understand the cost curve in this manner, it now becomes possible to relate the supply of any commodity to the national income. If there is uniform production period in the economy, the national income at that period of time will be a summation of the output of different firms. This means increase in the supply of any commodity is dependent on increasing rate of investment in that sector. Obviously, the supply function of any commodity must include as well, some considerations about the conditions under which greater investment can be undertaken in that sector. A particular firm shall begin to increase its rate of investment to enlarge its plant structure for a higher rate of output if only the profitability of investment increases. Under circumstances when the average cost curve is horizontal and the rate of interest is constant, an *increasing price would certainly increase the profit rate of investment.* In such cases investment of any firm is a function of changes *in price for that* commodity. However when average cost is constant price itself becomes a function of changes in demand for the commodity.

To take into account these considerations we have taken the supply function into two parts: (1) a price function, (2) an investment function.

$$p_i = f\left(\frac{dE_i}{dt}\right)$$

$$I_i = \phi\left(\frac{dpi}{dt}\right)$$

We have assumed these functions to be linear so that these become

$$p_i = a_1 + b_1 \frac{dE_i}{dt} \qquad (2)$$

$$I_i = a_2 + b_2 \frac{dp_i}{dt} \qquad (3)$$

In addition to these three equations we have another equation to close the system. We have altogether four variables and only three equations so that we require another equation to solve it. This we do by incorporating the familiar multiplier equation.

[3] One can refer to N. Kaldor's "Equilibrium of the Firm", *Economic Journal*, 1934, p. 60 ff. for a discussion of entrepreneurial ability and static condition.

$$\frac{dy}{dt} = \phi\left(\frac{dI_i}{dt}\right) = a_3 + b_3 \frac{dI_i}{dt}$$

It is undoubtedly true if ith sector is very insignificant in the national economy b_3 would be found to be very small But let us assume that the representative character of the firm also includes considerations about the size of the firm so that b_3 would not be very insignificant

II

We have altogether four equations

$$E_i = f(y) = a + by \quad (1)$$

$$p_i = \phi(E_i) = a_1 + b \frac{dE_i}{dt} \quad (2)$$

$$I_i = \psi(p_i) = a_2 + b_2 \frac{dp}{dt} \quad (3)$$

$$\frac{dy}{dt} = \gamma(I_i) = a_3 + b_3 \frac{dI_i}{dt} \quad (4)$$

This is a set of four simultaneous differential equations with four dependent variables and the independent variable t We can have a solution for any one of dependent variables The solution for Y (income) would be

$$y = Ae^{t\sqrt{rj^{bt}}} + Be^{-t\sqrt{rj^{bt}}} + m/l + n/l$$

where A and B are arbitrary constants and

$$l = -b_1 b_2 b_3 \quad m = a/b \quad n = -l/b$$

Of these four equations we know

$$d\phi > 0$$

$$d\psi > 0$$

$$d\gamma > 0$$

so that b_1 b_2 and b_3 are all positive and evidently l is negative

Given these conditions the system now depends upon the nature of equation (1) i e the sign of df If $df > 0$ it will be seen we will have steady growth or decline of all the variables If $df = 0$ the system will be in a state of equilibrium at any existing level If $df < 0$ all the variables would continually oscillate Having then seized the importance of this function we are thus led to an examination of the nature of the function f This function it will be seen is a relationship between the demand for a commodity and the national income But the demand for a commodity is influenced by the changes in national income through the consumers whose incomes have corresponding changes Exact specification of this function thus is dependent on the nature of consumers reaction to changes in their income We have accordingly employed a hypothesis of our own on the nature of consumers behaviour and have formed the function on the basis of that hypothesis This hypothesis that we have in mind can be stated thus The maintenance of a habitual standard of living is the first thing that any family aims at By habitual

standard of living we mean the satisfaction of different types of want in a way and to a degree which is peculiar and unique to that family over a period of time in which the income of the family does not have wide fluctuations Men have unlimited wants, and there are definite limits to their capability to satisfy all types of wants, and naturally one would find out a particolar collection of goods which would give him the best out of his limited resources and so long as his income does not change he will continue to consume that collection of goods and thereby shall form a habit Other persons within the same range of income would also find the same collection of goods most advantageous to them This is because, given the income horizon they cannot transgress it by beginning to consume a collection that is available to higher income group even though *most of them would like to emulate* the habits of the relatively richer people The collection that is being consumed by the people belonging to the higher income level is a sort of ideal, after all it is only the collection of goods that is consumed places men to different classes To belong to a class simply means that every one consumes homogeneous collection of commodity within the class Person belonging to an income class can consume a collection being used by a group below the particular income class, but none would do so since so long as he consumes a collection that is commensurate with the income class to which he belongs, he rightfully belongs to that income class and given his income this is the highest class to which he can move Accordingly since each income group has a fixed way to spend their income on the purchase of different commodities, it is evident that the proportion of income spent on each item of consumption is fairly given at any period of time When we mean a fixed standard of living we certainly mean that the proportion vector is maintained fairly rigidly within each income class on the basis

$$E_k = P_{k1}\ Y_1 + P_{k2}\ Y_2 + \quad + P_{kn}\ Y_n$$

$$\frac{E_k}{y} = \sum_j P_{ij}\ \frac{y_j}{y}, (j=1, \quad n)$$

writing $\frac{E_k}{y} = s_k$ and $\frac{y_j}{y} = a_j$

we have $\frac{ds_k}{dy} = \sum_j P_{ij}\ \frac{da_j}{dy}, (j=1, \quad n)$

E_k=Expenditure on kth commodity

P_{ij}=Proportion ol income spent by the jth income class on ith commodity

Y_j=*Income (Total) of the jth class*

$i = (1, \quad k)$

$j = (1 \quad n)$

This formulation, however, involves that two persons coming on to the same income class, one from above and one from below, would begin to have the same standard of living Empirical studies so far made in connection with consumer's behaviour have, however, pointed to contrary

evidence[4] In the long run, of course, this would definitely be so since both these sets of persons would have to adjust to the new situation. The set of persons who comes from above would for some time insist on the maintenance of old standard of living even at the cost of saving which was higher than the present situation to which they are now placed While the persons who come from below may at once adjust themselves to the new situation This means the expenditure on items as a proportion of income for these two sets of persons would be different We have, however, assumed that these two distributions would be similar and this for the grounds:

(1) The length of the period which forms our unit is somewhat longer so that people would get some time to adjust themselves to the changed situation

(2) Under normal circumstances the income streams one usually receives are either, (*a*) steadily increasing, (*b*) steadily decreasing, (*c*) constant, and (*d*) fluctuating For categories (*a*) and (*c*) we need not worry since the non linearity that we fear does not apply in those two cases For category (*b*), if the income decreases steadily and if he does not expect anything contrary to it, he would find no difficulty in adjusting to a lower situation If, however, his expectation is contrary to the movement he would definitely try to maintain his old standard of living by dissaving[5] But how many persons we expect would hold such contrary expectation in the face of a steadily falling income For category (*d*) that have a fluctuating income would not form any standard of living on the basis of current stream of income so that to assume that they would be able to adjust rather easily to income changes would not be very unrealistic If, however, the average of this fluctuating income stream is just sufficient only to allow a bare standard of living at occasions, persons belonging to this income class would be faced to dissave or incur loans In such cases, the sum of p_{ij}s excluding saving would be greater than unity

If we assume that people coming from above would take some time to adjust themselves to the new low level of income we ought as well to assume that people coming from below would also take some time to adjust themselves to the new high income level Initially therefore, in any ith class at any period of time there would be a set of persons who would spend relatively more than the average while there would be another set of persons who would spend relatively less than the average so that on balance if we insist on the average we would not err much

Given this the sign of $\frac{ds_k}{dy}$ would depend upon the sign distribution of Ps and $\frac{da_j}{dy}$ Given the sign distribution of P's let us now see the

[4] See in this connection R P Mack *Consumption and Business Fluctuation*, (NBER) 1956

[5] Duesenberry, *Income Saving and the Theory of Consumers' Behaviour*, Chap IV

pattern of sign distribution of $\frac{da_j}{dy}$ s To know this we have to trace the nature of the function $\frac{y_j}{y} = K(y)$

Now

$y_j/y = a_j = \frac{\beta_j N_j}{y}$

N_j = Number of income earners within the class

β_j = mid point of the income class

$$\frac{da_j}{dy} = \frac{\beta_j y \frac{dN_j}{dy} - \beta_j N_j}{y^2}$$

$\frac{da_j}{dy} > 0$ if $\beta_j y \frac{dN_j}{dy} > \beta_j N_j$

or if $\frac{dN_j}{dy} > \frac{N_j}{y}$

that is if $\frac{d N_j}{dy^2} > 0$

This condition, however, cannot be fulfilled for all classes for obvious reason [6] But for some classes this must be true If for those classes at the same time P s are on the average high we have a strong presumption that $\frac{ds_k}{dy}$ is positive [7]

Thus means we are brought to another function $N_j(Y)$ on which depends the sign of the equation (1) We have also seen under certain conditions imposed on the $N_j(Y)$ function the equation (1) may be an increasing function If this is true for all the K commodities or for a large majority of the K commodities at any point of time we would have an explosive economic system

The nature of the movement of the economic system accordingly is dependent on the nature of the $N_j(Y)$ function and more particularly on the sign of the second derivative of the $N_j(Y)$ function with respect to Y But this function is not continuous at all ranges It is a bounded function N_j it will be remembered is the frequency of income earners within the income class j Accordingly there is one N_j depending on the supply of population and complementary factors at any point of time beyond which N_j cannot increase [8] At this point therefore $N_j(Y)$ (at

[6] $\frac{da_j}{dy}$ cannot be positive for all the n class at the same time period The reason is since $\sum_1^n \frac{y_j}{y} = 1$, $\sum_1^n \frac{da_j}{dy} = 0$ Therefore if it is positive for m classes for $(n-m)$ classes it must be negative But those classes which are positive must as well fulfil the other condition

[7] This may be accepted for the time being as an assumption

[8] Since ours is a micro-setting the meaning of full employment will have to be understood in a different way It may be that labourers are not available for employment, labourers specific to that type of production or resources are not available for use in that particular line of production Actually micro-economic full employment is reached earlier than macro-economic full employment The plants in a factory use different factors in a specific ratio and if any of the factors are not available, an

$N_j = N_j$) does not exist or at any rate the second derivative of the function is no longer positive Similarly there is one N_j depending on the nature of contractual income receivers at any point of time below which N_j can not move At this point therefore $N_j(Y)$ function again does not exist or at any rate the second derivative is no longer positive That is at $N_j < N_j$ and $N_j > N_j$, $N_j(Y)$ function has not positive second derivative Within the zone $\bar{N}_j < N_j < N_j$ the function can have a positive second derivative[1]

We thus come across certain non linearities in the system The income can continually grow so long as $N_j < N_j$ Once however $N_j = N_j$, the second derivative of the $N_j(Y)$ function is no longer positive This means $\frac{da_j}{dy}$ ($j=1,$ m) which were positive so long become negative a_j ($j=1,$. m) begins to decrease even though Y increases The other $\frac{da}{dy}$ ($i=j+1,$ n, $i \neq j$) becomes positive, a_i ($i=j+1,$ n $i \neq j$) increases This leads to a reversal of the sign of $\frac{ds_k}{dy}$ Given the equation (2) this leads to a fall in P_k and consequently a fall in investment and income Once the investment falls off N_j becomes less than $\bar{N}_j$ and the movement proceeds along the function $N_j(Y)$ This means $\frac{ds_k}{dy}$ again becomes positive This change in the sign of $\frac{ds_k}{dy}$, however, does not affect the income shares, s_k continues to fall as income falls Price falls and also falls the investment. This movement, however, stops again at $N_j = \bar{N}_j$ At this point again $N_j(Y)$ function has no positive second derivative This again changes the sign of $\frac{ds_k}{dy}$. s_k begins to increase while Y falls This leads to an increase in price and consequently investment and income The trend of the income share changes, a_j begins to increase while a_i s decrease Once again following increasing investment $N_j > \bar{N}_j$ and the system follows the normal path $\frac{ds_k}{dy}$ becomes again positive

We have been conscious of the heroic way in which we had been moving so long This will be remembered that we started with the assumption that the relevant p s associated with $\frac{da_j}{dy}$ s are of sufficient

---

adherence to the ratio which is given at any time period depending upon the technique of production would lead to less than capacity utilisation of all other plants in the same factory even though all these factors are available sufficiently Supply of all factors being not equally elastic a large macro-unemployment is consistent with the micro full employment See in this connection Kaldor s "Stability and Full Employment" *E J* 1938

[1] Kaldor *op cit* While analysing the cyclical behaviour pattern we also hold the same view "Sooner or later however the point is reached where all the available labour is absorbed in production Even if the installation of additional equipment goes on still further current production cannot be increased much further however much the propensity to consume is stimulated For if machines and labour are complementary in production and there is not enough labour to work all the machines output cannot be augmented by adding mere machines" pp 651 52

ly high value to obtain a positive $\frac{ds_k}{dy}$ Of course, we cannot tell *a priori* what are these commodities for which this will be true at any point of time But there is nothing to doubt that for some at any point of time this will be true Let us assume that at any point of time for m of n income classes $\frac{da}{dy}$ is positive Depending on the value of ps for different commodities $\frac{ds}{dy}$ is positive for r of the k commodities In successive periods following changing investment and income some among the m $\frac{da}{dy}$ s may become negative or their magnitude may change while some of $(n-m)\frac{da}{dy}$ s may become positive or their magnitude changes This will lead to a reversal of the sign of some among the $r\frac{ds}{dy}$ s while of $(k-r)$ $\frac{ds}{dy}$ s some may change its sign In this way we will have a system in which all the k commodities will have its own cycles but not all moving in harmony Some will be leading some will be lagging and in this process we shall always have some of the k commodities whose time shape of movement would completely be reverse to the general time shape of movement [*] The aggregative analysis absolutely obscures this particular fact, it is made to appear as if all the economic variables are subjected to some meta-economic forces which bring about this harmonious movement in all the variables at all times [11]

[*] This can be shown in this way let the system of equations be

$$P_{11}\frac{da_1}{dy} + P_{12}\frac{da_2}{dy} + \cdots + P_{1n}\frac{da_n}{dy} = \frac{ds_1}{dy}$$

$$P_{21}\frac{da_1}{dy} + P_{22}\frac{da_2}{dy} + \cdots + P_{2n}\frac{da_n}{dy} = \frac{ds_2}{dy}$$

$$\frac{da_1}{dy}\sum_1^k P_{j1} + \frac{da_2}{dy}\sum_1^k P_{j2} + \cdots + \frac{da_n}{dy}\sum_1^k P_{jn} = \sum_1^k \frac{ds_j}{dy} \quad j = (1 \quad k)$$

$$\text{but since} \quad \sum_1^k P_{j1} = \sum_1^k P_{j2} = \sum_1^k P_{jn} = 1$$

$$\text{and} \quad \sum_1^n \frac{da_n}{dy} = 0 \text{ we have } \sum_1^k \frac{ds_k}{dy} = 0$$

This means $\frac{ds_i}{dy}$ cannot all be positive or be negative But some of these must be positive and some must be negative at the same time We have assumed that saving as a commodity is included in the consumption behaviour Of course, when we so include we have also to take into account the possible dissaving so that P_{ij} would be allowed to take up any value either positive or negative or null but still $\sum P_{ij}=1$

In this connection one is referred to W Mitchells *What happens during the Business Cycle* (NBER) He analysed innumerable component cycles and found that a considerable proportion of cycle do not follow the general time pattern of movement. It has been shown that 65 per cent of the series show a positive cyclical behaviour pattern with reference cycle 9.3 per cent of the components show absolute inverted pattern with the reference cycle while others are neutral or irregular Mitchell, pp 54-55 (Table 4)

This is not to deny, however, any possibility of a rough harmonious movement, rough in the sense that a large majority of the commodities move together giving the appearance of a trade cycle of the academic type If we assume that these r commodities which were moving in rough unision for the time being are such that their production period has somehow tion of the total output their combined movement may somehow influence been co ordinated and if as well the total r forms a considerable propor the general movement [1] When these r commodities go through the second stage i e their $-\frac{ds}{dy}$ becomes negative a crash comes in the com bined sector Evidently III phase commences where the aggregated out put shows a reverse trend by the combined multiplier effect When such becomes the case some of the $(k-r)$ commodities for which $-\frac{ds}{dy}$ was still positive would begin to contract as $-\frac{ds}{dy}$ is positive for these commodities A large number of these accordingly $r+a(k-r)$ $a<1$ would begin to move in harmony in their march towards deep depression While at the same time the rest $k-r+a(k-r)$, $a<1$ whose $-\frac{ds}{dy}$ has become negative by now would begin to produce more as depression continues and for these com modities we have a reverse trend The increasing investment in these sectors do not form a considerable proportion of total output and as a result would not largely influence the general movement The contrac tion for each sector cannot however, go for ever for the reason already mentioned Cycles in individual sectors shall go on and since the r sec tors follow closely to each others heels they draw the economy on to the

[1] While still the general business activity is ebbing or rather at the last phase of recess on some of the comm d t es show the sign of revival Dr Mills has traced that 6 out of 16 commod ty groups he studied began to show increasing production at the last phase of depression The commodity groups are (i) Foods (ii) Consumer goods (iii) Animal products domestic (iv) American fur products (v) Non durable goods (vi) Crop products domestic Dr Mills *op cit* Chap VIII p 75

Dr Mills has also measured the distribution of outlay pattern over the cycles Here too he has followed the same pattern of analysis i e he has broken down the total outlay into its various components and has studied them individually He found that the increase in the outlay on these commodities has been occasioned more by increase in the prod iction and to some extent by the rises in price

We may start with the inter stage period VII VIII only 11 out of 64 commod t es included show positive value changes in the average outlay patterns Increases in the quantity of goods exchanged account for all positive value changes At this stage of contraction when the tide is ebb ng strongly pick ups in the physical volume are responsible for all observed expansion in the monetary payments for commodities as these are reflected in the average outlay patterns for individual goods

Between stages VIII and IX the final period of general business contract on the number of positive changes among buyers outlays increase substantially The quantity factor accounts for 79 per cent of these prices for 21 per cent

Dr Mills *op cit* p 68 ff See also Table 21 p 69

It should be noted however that Dr Mills analysis is not as cogent as it ought to have been He ascribes to price an independence which the writer does not hold to be logical *(Refer to note 7) In stages VII VIII the* quantity change accounted for all changes in outlay the price effect was zero In the following inter stage period the changes in price accounted for 21 per cent of this outlay variation These changes in the pattern of adjustment the writer believes might have been occasioned by the presence of income-consumption lag of one period

phase I via IV The general movement thus is possible if these r commodities do lead the way.[13]

[13] If we assume that N_j and N_j are functions of time such that $N_j(t+1)$ $N_j(t)$ and $N_j(t+1)$ $N_j(t)$ we will have growth interposed on the cycle.

Notes on Economic Oscillation

1 A PRESENTDAY trade cycle theorist is expected to answer at least a couple of questions satisfactorily, viz (1) how to explain the shape of the fluctuations in income and employment that have occurred for many years and (2) what are the factors, responsible for the turning points in the cycles The present note intends to consider the former problem only, though it is clear that the problems are interlinked to a large extent and a proper understanding of one is essential to answer the other

In recent times Prof Hicks has offered a theory of the trade cycle in the full sense of the word (I) He works out a theory in which it is shown that a few simple hypotheses are sufficient to produce cycles of the type which have been observed About the periodic character it seems to him that the economic history of the last 150 years organises itself so easily into a series of 7 to 10 years cycles with certain interruptions traceable to major wars that the reality of the cycle seems unmistakable In the Hicksian type cycle theories generally the following assumptions are made to produce the desired result

(1) Real consumption expenditure is a function of real income in the recent past,
(2) Autonomous investment, i e investment which is independent of output, rises through time at a more or less constant percentage rate,
(3) A substantial amount of investment is induced by changes in output The accelerator must have a rather high value, i e in interact with the multiplier it must tend to produce explosive cycles,
(4) At any point in time there is a ceiling beyond which output c be increased, and
(5) The value of the accelerator is much smaller on the down on the upswing due to technical limitations on the p dis investment

From the assumptions the familiar Harrod Domar proposition ca derived that if autonomous investment rises at a constant percentage ra there will be an equilibrium growth pattern for income many income will grow at the same rate as autonomous investment and the ratio of income to autonomous investment will depend on the values of the multiplier and accelerator (2) Regarding the interaction of the multiplier and accelerator it is held that when autonomous investment rises trendwise,

cyclical fluctuations about the trend will arise The interesting point here is this it has sometimes been maintained that the values of the multiplier and accelerator must be such as not to produce antidamped cycles or exponential growth rates of income, because we do not observe any economic explosions The cycle has to be kept going by erratic shocks Hicks maintains that the erratic shock damped cycle mechanism would not produce cycles having as much regularity as actual cycles seem to have Consequently Hicks assumes a considerably large value for the accelerator and the idea of ceiling for output is invoked to explain the presence of antidamped as well as non explosive cycles(3) It is *possible for the value of accelerator which is assumed to be greater* than one to shift over fairly wide range and thereby causing variations in the length of the cycle

To Hicks the equilibrium rate of growth depends on the rate of increase of autonomous investment But it may be argued that the equilibrium rate of growth depends only on the size of the multiplier and the productivity of new investment and it must rise each year by an amount which depends on the multiplier (which determines the amount of income generated by investment) and on the inverse of the accelerator (which determines how much income is required to absorb the output added by the previous years investment)(4) The required rate of growth is simply the product of the marginal propensity to consume and the inverse of the accelerator Or in other words the growth rate is quite independent of the distribution of investment as between autonomous and induced investment

1 2 Hicks argument and similar ones are based on a dubious division of investment into three classes autonomous investment brought about by technical developments of various kinds replacement investment which is made necessary by the physical deterioration of equipment and lastly induced investment is necessitated by rising costs owing to high intensity of operation of equipment However the point we want to drive home is that we cannot make a clear distinction between three types of investment except in certain rather special cases Putting aside investment for production of new products we can say that investment takes place when in view of output expectations it will cost the firm less to produce all or part of its output with new equipment than with the *existing equipment The cost comparison is one between the operating* cost with existing equipment and operating costs plus capital costs for new equipment The comparison will be favourable to the purchase of new equipment when

(1) the new equipment is technically superior to the old
(2) the old equipment has high maintenance or operation costs because of its age or
(3) output is so high that the existing equipment must be operated at high intensity which raises operating costs

Generally, all three considerations will be present and the distinction between *types of investment loses most of its* usefulness(5)

In the present note, instead of dividing investment into several compo nents, as described above, we shall use it with a different connotation, which will be stated shortly Before that we propose to define two other very commonly used term, viz commodity and output

I 3 In an economic system different units, we shall call industries, are engaged in the production of commodities, for which there is a positive choice Any choice can be represented as a choice of a commodity bundle On the basis of a numbered list of commodities, a commodity bundle is given by specifying a sequence of n numbers, $a_1, a_2, \ldots a_n$, each number representing the amount of the corresponding commodity in the bundle These amounts, in turn, may be interpreted as rates of flow per unit of time, maintained at a constant level for an indefinite *period, thus each commodity is characterised by, apart from the quality of* availability at a particular time, its qualitative characteristics One com modity is differentiated from another by the basic qualities it possesses *Basic quality is that which makes a commodity saleable* That is to say, each industry is producing a distinct commodity or rendering service, as the case may be (we shall neglect the services sector in our analysis) In other words by assigning each commodity to each individual industry, we shall assume the equality in the number of commodities and industries in our analysis Each industry is comprised of several firms producing the commodity assigned to the particular industry. Total output is the number of commodities multiplied by the number of units of *different* commodities produced at a particular time period The value of output may be described as follows

Let a bundle of n commodities be the result of a productive activity and can be represented by a point $x=(x_1, x_2, \ldots, x_n)$ in n dimensional space At given prices, $p_1, p_2, \ldots, p_n$, the profit obtained from that activity will be homogeneous linear function $l(x)=p_1x_1+p_2x_2+\ldots p_nx_n$ of the co ordinates of the point x with the prices as co efficients Assum ing that all prices are positive, the terms $p_1x_1, p_2x_2, \ldots$, will be positive and add upto the total value of output We can put the whole idea on commodities and activities two original entities, in terms of linear activity analysis The two postulates are:

(1) *on commodities* There exists a finite number n of commodities, classified into l desired, p primary and $n-p-l$ intermediate com modities Each commodity can exist in any non negative amount in which it can be produced or withdrawn from nature ("Desired commodities represent goods and services whose consumption or availability is the recognized purpose of production and it is to these commodities that we shall keep our attention to),

(2) *existence of basic activities* There exists finite number m of basic activities An activity is characterised by a net output number for

each commodity

In a one-commodity economy the price-output behaviour of the firms is relatively simple, as the consumer demand will be the primary determinant of equilibrium But in a multicommodity economy the price-output behaviour is not so simple, and apart from consumer demand, other important factors creep in Moreover, an additional problem is introduced by the operation of market imperfection, meaning thereby, the positive influence on the market of the price-output behaviour of a firm If a firm thinks and acts on the assumption that its price-output behaviour is not just what it should be, the influence of its action will be felt by other firms in the industry Moreover, the input-output analysis reveals empirically the quantitative relationships between output levels in various industries In short, a firm s price-output behaviour depends on three major forces — the behaviour of the ultimate consumption sector, the behaviour of the firms within the industry and the behaviour of firms out side the industry The price a firm charges for its product depends partly on the price charged by other firms in the industry and partly, on the degree of influence the particular firm has on the market. As a consequence even in equilibrium wide range of prices may prevail in the market for a single commodity It means, disparity in prices and a firm's equilibrium are not contradictory In other words, not the relative prices but a change in these relative prices gives rise to economic oscillation.

At this stage we present our notions about investment We have al ready argued that it is rather futile analytically to divide total investment into three parts We should rather view it as an activity as described in the postulate 2 Investment a prime mover of the economic system, may take the shape of production of an already existing commodity or a new commodity In the latter case it means setting up of a new industry while the former implies increase in the number of firms, or increasing the output of an existing firm An investment activity thus may or may not give rise to total number of commodities To put it differently a non commodity activity as we shall call it may raise the output level only and a commodity activity gives rise to output and commodities as well(6) The significance of this distinction will become clear later By invest ment opportunities we shall mean availability of scope for investing in the production of new commodity As industries are generally inter dependent for their final output price-output behaviour of the firms will respond differently to commodity activity and non-commodity-activity, and as a consequence the resultant oscillations will have different shape The following section describes the nature of some oscillations.

1 4 Theory of economic changes is concerned with the movements of different variables comprising the system and with the forces acting on these variables, i e it deals with the interaction of force and movement Since displacement involves direction as well as magnitude it is a vector

quantity and can therefore be represented by a straight line The length of the line indicates the amount of the displacement to some convenient scale, and its inclination shows direction of displacement In certain problems we are concerned merely with the rate of which the magnitude of the displacement is changing and the change of direction is immaterial, as for instance, in the case of the economic system moving from some given position to another given position In such cases analysis of the time path is more relevant Since velocity is also a vector quantity, if the displacement is constant in one direction, the velocity will obviously be in the same direction If the displacement is not constant in direction, then the velocity at a given time period will be in the same direction as the displacement at that instant and, therefore, will be tangential to the path of the variables concerned In this connection the concept of speed is very useful, which may be defined as the rate of change of magnitude of the displacement with respect to time Then acceleration of variables, also a vector quantity, may be defined as the rate of change of the velocity with respect to time

When a variable, which is held in position by some constraints, is displaced from its equilibrium position by the application of some force, in the form of induced or autonomous change in some other variables, the former will tend to restore the variables to their equilibrium position Regarding the importance of the internal elastic forces an observation is necessary here A force is exogenous whenever a variable changes its position due to forces external to it and it is endogenous when it is internal to it That is to say, any induced change is exogenous and only autonomous changes are endogenous Now, a force, whether external or internal, is applied on a variable, it may change but not *necessarily* so, because every variable, due to operation of forces mainly internal, will tend to resist the force applied on it That is, to displace a variable from its position, a positive resistance shall have to overcome first the more the resistance the more the force needed to displace the variable These resistive forces contribute much apart from exogenous forces, towards restoring the equilibrium This observation it should be noted differs from the classical position of the free operation of the market mechanism Because, if the resistive power of a variable is taken in conjunction with our definition of endogenous and exogenous forces then it becomes clear that what we have in mind is not the free operation of the market mechanism as such, but the autonomous forces operating within the variable itself

An oscillation on which, after the initial displacement no exogenous forces act and the movement is maintained by the internal elastic forces will be called steady or more appropriately free oscillation But in actual practice the energy possessed by the system is gradually dissipated in overcoming internal and external resistances to the movement, and the variables finally come to rest and the oscillation becomes damped A third type of oscillation of much importance is that in which a periodic

disturbing force is applied to the variable and may be called forced or induced oscillation It is said to be periodic because it keeps on repeating Even in the case of free oscillation the law of simple harmonic motion seems to be applicable (if a variable oscillates about an equilibrium position in such a way that its acceleration towards the equilibrium position is directly proportional to its displacement from the equilibrium position it is said to have simple harmonic motion) The whole series of events included from a given point to the next similar point in the same direction is called a period or a cycle The number of oscillations in a given time period may be called frequency Mathematically the shapes of the oscillation are mainly the functions of $e^{\alpha t}$ log αt and sin $(\omega t - \epsilon)$ Consider a product which frequently occurs in the solution of a differential equation It is $y = e^{\alpha t} \cos(\omega t - \epsilon)$ which consists of the product of an exponential term and a trigonometric term Clearly for any value of t the value of y is going to be given by multiplying the appropriate values of $e^{\alpha t}$ and $\cos(\omega t - \epsilon)$ Now if $\alpha = 0$ then $e^{\alpha t} = 1$ and in this case the value of the product is simply $\cos(\omega t - \epsilon)$ and we shall have free oscillations If however $\alpha > 0$ then the effect of the exponential terms is to magnify the oscillations by a factor which increases at an exponential rate and the oscillations become explosive If $\alpha < 0$ then the effect of the exponential term is to diminish the oscillations by a factor which increases at an exponential rate and oscillations become damped When one combines these three parts the result will be an exponential growth having superimposed upon it a damped oscillation which soon ceases to have any importance and an oscillation of constant amplitude which soon becomes relatively unimportant

How far the last sentence of the preceding paragraph is true depends on what is known as super multiplier To explore this region further we start our discussion with a description of the formation of oscillations

Just as an electro motive force generates waves in the electrical conductor *similarly an economic force induced or autonomous tends to* generate waves in the economic system But since in a dynamic system the variables will have varying degree of resistance at any given time period say for example due to varying rates of growth an economic force of similar magnitude will produce if at all varying sets of waves A *dynamic economic system may be visualised as a system susceptible to* various degrees of economic forces and producing waves of varying shapes In terms of our previous analysis the more a system develops resisting power more is needed to generate waves These waves will be periodic if the forces applied are also periodic otherwise the system will degenerate into damped oscillation *for reasons already discussed* [1]

[1] In order that the oscillations shall be sinusoidal it is necessary that the variables shall *move at a rate proportional to sin* θ In the majority of cases calculations are made on the assumption that the variables follow a sine law since the mathematics would otherwise be complicated to an undesired extent Nevertheless it should not be forgotten that it is only an approximation made for the purpose of simplifying the calculations

Now, since both the positive and the negative halves of the oscillation are equal, the average value taken over a complete cycle is zero Following this idea, suppose that a force is applied on a variable, the instantaneous value of the force being represented by ir, where i is the instantaneous value of the force and r is the resistance Since r in a given time period is constant, the force at any instant is proportional to i It leads to our fundamental idea represented in the following expression

(1.5 1) $G=I_r+K$ where G is the final outcome as represented in economic growth and K is some constant It implies that with given r higher the value of I, higher will be the value of G Another important implication is that the more a system develops resisting power, as a consequence of high rate of economic growth, higher rate of I is required to achieve a given rate of G

We shall develop the equation (1.5 1) to give it some dynamic properties Writing V for I_r, we derive the following equations

(1.5 2) $Gt=V_{t-1}+K$

or $Gt=G_{t-1}+G_t+K$

(1.5 3) or $\triangle G_t=(\pi-i)\,G_{t-1}+K$

Here we have an equation relating G to some rate of change, here the rate of change of V For instance, we could have

$G=G_0\left(1+a\,\frac{dv}{dt}\right)$, where $\frac{dv}{dt}$ is the rate of change of V And as it happens, the rate of change of V is in turn related to the rate of change of G by an equation such that $\frac{dv}{dt}=b+c\,\frac{dG}{dt}$, then substitution will lead to

(1.5 4) $G=G_0\left(1+ab+ac\,\frac{dG}{dt}\right)$ which may be rewritten as

(1.5 4a) $G=G_0(1+ab)+ac\,G_0\frac{dG}{dt}=P+Q\,\frac{dG}{dt}$

where P and Q are arbitrary constants The solution proceeds

$$G=P+Q\,\frac{dG}{dt}$$

i e $(G-P)\,dt=Q\,dG$

$$\therefore dt=\frac{Q}{G-P}\,dG$$

$$\int dt=\int\frac{Q}{G-P}\,dG$$

or $t=Q\log(G-P)+G$ where C=constant

$=Q\log A\,(G-P)$ where $\log A=C$

$$\frac{t}{Q}=\log A\,(G-P)$$

$$\therefore A\,(G-P)=e^{t/r}$$

or $G-P=\frac{1}{A}\,e^{t/r}$, where $G=G_0(1+ab)+\frac{1}{A}\,e^{t/ac}\,G_0$

If we went to know the level of G at any particular time period we are immediately confronted with the fact that we do not know what value is

to be given to the arbitrary constant A. We can determine this value if we know, for example, that the level of G at time $t=0$ is G_0. Then we will have

$$G_0 = G_0(1+ab) + \frac{1}{A} e^0$$

$$= G_0(1+ab) + \frac{1}{A}$$

$$\text{where } A = -\frac{1}{abG_0}$$

We thus have the solution

$$G = G_0(1+ab) - abG_0 e^{t/a} G_0$$

satisfies the original differential equations, and also the condition that at time $t=0$ the level of G is G_0. The level of G at any other time may now be determined by substitution of the appropriate value of t in the equation just derived.[1]

Economic waves generally differ more or less from the standard sin wave. Whether sinusoidal or not the oscillation is periodic in nature. It can be demonstrated mathematically that any periodic curve can be split up into a number of pure sin waves with different frequencies and amplitudes superimposed on one another. One of these component curves will have the same frequency as the resultant complex curve and shall be called the *fundamental* curve. The other components will have frequencies which are exact multiples of the fundamental frequency. If the frequency of one of these other components bore a fractional ratio to that of the fundamental it is easy to see that the second cycle would not be repetition of the first. These various components are known as harmonics. In the case of free oscillation the law of simple harmonic motion seems to be applicable as we already noted.

1.6. In this section we shall try to describe the types of oscillations which occur in the economic system under certain assumptions. In this connection we shall have to dissolve a very important problem that is whether it is possible to explain all the past economic fluctuations in record by one single theory. It seems to us that it is not possible. The main reason for that is it is not possible at least not realistic to define the economic system in a rigid form. The economic growth brings with it a certain structural change in the economic system and as a result the variables may change their nature or even some may cease to have no significant influence on the system. New variables creep in. For instance if we compare the emphasis laid on the variables in the classical and post Keynesian literature we get striking dissimilarities. This change in outlook may be due to enhanced knowledge, or discovery of new facts but still it may be maintained that different economic set up

[1] The rate of change of a variable depends on three things the maximum value of the variable the form of oscillation and the frequency. The rate of change of the variable at any instant is measured by the slope of the curve at that particular point. It follows that if the variable varies according to a sin law the rate of change of the variable also obeys a sin law. The maximum value of the rate of change occurs when the actual value of the variables is zero.

calls for separate analysis There may be, and must be certain common features but the prime mover in different economic system is likely to be different Economic fluctuations at different points of economic changes resulted from factors which can be properly understood in that particular economic set up Economic fluctuation in an underdeveloped country may result from different factors and the fluctuations may even be of different nature from those originating in a relatively developed country The model we have presented in this paper is applicable to an economy which has reached a formidable stage of economic growth.

Secondly we assume a closed economy Economic fluctuations of foreign origin is not uncommon and the literature in this respect is quite imposing It is also true that with gradual development of international trade it is becoming all the more important in influencing the working of the domestic economic system Moreover in explaining periodicity, foreign trade multiplier may be taken as that exogenous variable which generates the periodic shock required to produce cycles Our closed economy assumption is mainly for simplifying our analysis

To emphasise the importance of commodity and non commodity activity, we have assumed wage rate rate of interest and supply of credit as given Though these assumptions are rather restrictive in nature, it seems that even if they are relaxed our conclusions will not be affected materially

One point should be noted here about the nature of accelerator Duesenberry while criticising Hicks trade cycle theory, argues that the Hicksian assumption of an accelerator, high enough to produce either exponential growth in income or anti damped cycles is not empirically verified(7) But it is quite reasonable to say that it is not possible to assign any rigid value to the accelerator, because if there are distributed lags in both consumption and investment accelerator will be high and exponential movements will occur The main point is if with the displacement of economic variables speed of the oscillation varies then automatically it implies that acceleration too varies with displacement The variation in acceleration results in the varying shape of oscillations and its turning points and it is not necessarily due to technical limitations on output as Hicks assumes it to be, but due to the behaviour of the variables itself [3]

[3] If speed is defined as the rate of change of the displacement with respect to time then geometrically if initial position is plotted as ordinates with the corresponding time intervals as abscissae it follows that the speed at a given instant is represented to scale by the slope of the tangent to the displacement curve at the same instant If therefore a second curve is drawn the ordinates of which at every instant are proportional to the corresponding slopes of the displacement time curve this second curve will show the variation of the speed of the point with time Similarly since tangential acceleration is rate of change of speed with respect to time the variation of acceleration with time is given by another curve the ordinates of which at every instant are proportional to the corresponding slopes of the speed time curve Sometimes a curve showing the variation of speed with displacement is given and it becomes necessary to draw a curve showing the variation of acceleration with displacement A curve drawn with ordinates which are everywhere proportional to the corresponding subnormals of the speed-displacement curve will give the accelera

Let us suppose a commodity investment takes place It creates economic force in a two fold way, first, by directly increasing output and affecting consumer behaviour and thereby influencing industries producing commodities close to it and, secondly, by increasing the potentiality of creating ancillary industries and thereby affecting virtually all the industries to various extent The resultant consumer behaviour and price output behaviour of different industries will generate *oscillations* subject to the constraint of r The output of industries close to the new industry will oscillate more with a higher magnitude as compared to distant industries And hence the result will be a complex of sin curves However as the impact is likely to be felt by all the industries the frequency of the curves will be close to that of the fundamental The interesting point here is that the oscillations will be forced as the setting up of ancillary industries will act as periodic force on the system Moreover, if I_r ratio increases at an exponential rate, $a > 0$ condition prevails and the oscillation may become explosive But if the I_r ratio fails to increase at an exponential rate a period of free oscillation may prevail[4] Historically, the industrial growth shows that a new commodity may affect the *production link* in either of the two ways

(1) by having creating effect on the production link and
(2) by having destructive effect The latter is analogous with the concept of resistance.

Now consider the case of a non commodity investment By definition it follows that the immediate impact will be felt by the firms of a particular industry (Here we tacitly assume that the demand condition is given) Secondly impact will be felt by those industries whose outputs are the basic inputs of the said industry It shall be noted that the impact on total output may not be large because some firms may cut

---

tion-displacement curve for the point Suppose a force the magnitude of which varies from time to time is acted upon the economic system Since the acceleration is directly proportional to the applied force at different time-points the acceleration time curve may be drawn if the force-time curve is given But $f = dv/dt$ where f is force and v is speed so that the change of speed during an interval of time t may be found by integrating the above equation Let V_0 the initial speed and V the final speed then we have $V - V_0 = \int f dt$ If the law of variation of f with t is known the change of speed for different time intervals may be found by substituting for f in terms of t and integrating Generally however the variation of f in terms of t cannot be expressed by a simple equation and direct integration is impossible The above equation then has to be solved by a process of approximate integration For a small finite interval of time δt the increase of speed δv is given by $\delta v = f_m \delta t$ where f_m is the mean acceleration during the interval of time δt If then the acceleration time space is divided into a number of vertical strips the increase of speed during the time interval corresponding to the width of any one strip is proportional to the arc of that strip The speed time curve, therefore takes the form in which each ordinate is proportional to the arc under the acceleration time curve up to the time corresponding to that ordinate The displacement time curve is obtained from the speed time curve in exactly the same way as the speed time curve is obtained from the acceleration time curve

[4] One point to be noted here is that a commodity investment reacts on the economy through its effects on the *production link*

down their output and operate with sufficient excess capacity But they cannot be profited sufficiently by cutting down output without increasing price as by operating below capacity they may be deprived of large scale economies, and this along with a possibility of increase in selling cost there will be a rise in unit cost of production So both price and output behaviour of these firms may change and thereby producing micro oscilla tions of significant amplitude It is clear that the new price output beha viour may result even in dis investment It has a very important implica tion If it is agreed that dis investment cannot fall below the size of depreciation allowances, then, after a downswing we need not follow the course of the cycle which produced the preceding upswing, instead a new cycle, based on the new initial conditions, which in turn depend on the amount of dis investment taking place in the trough of the previous depres sion, is started It also implies that the multiplier accelerator mechanism comes into play only after the elimination of the excess capacity This point of elimination gives rise to a fresh cycle Consequently there is no reason for the second cycle to have a greater amplitude than the first even if the multiplier accelerator co efficients imply antidamped cycles So, a more or less steady cycle can be maintained without the necessity of a ceiling

Another implication is that if these oscillations have any impact on the other industries, it will be of minor importance Hence the micro oscilla tions of the individual firm s output will fail to synchronise with the total output oscillation As a result, the frequency ratio will vary from industry to industry and the consequent oscillations will be of different size with a large number of complex curves varying at different degree from the fundamental Here the I_r ratio is likely to be low and hence a low value for G and $(a < 0)$ condition will damp the oscillations The broad conclusion that can be drawn is that non commodity investment will give rise to significant difference between the fundamental and the component curves and sectoral oscillation will be far more prominent than that of the economic system as a whole Moreover, unless there is exogenous forces generated in the system in some other sector, the non commodity investment will give rise to damped oscillation as the price output behaviour of the firms is not likely to be periodic in this case, and the frequency of the resulting oscillations is not likely to be equal That is to say, a non commodity investment will give more micro-oscillations than micro-trade cycle

We can now combine the effects of two types of investment des cribed above The pattern of oscillations will depend on a couple of possible solutions as stated below

1 The simplest form of solution is $Y_t = A\lambda t$ The form taken by this solution will depend on the values of A and λ

(*a*) $A > 0$, $\lambda > 1$ Since $\lambda > 1$, λt increases indefinitely with t The effect of A is simply to multiply all values by a constant amount This will be an explosive solution because Y_t has no upper limit It is a

characteristic of the early phase of commodity investment

(*b*) $A > 0$ $0 > \lambda > -1$ Since λ is negative odd powers of λ will be negative but even powers positive It follows that the sign $Y_t = A\lambda t$ will alternate being positive for $t=0$ 2 4 and negative for $t=1$ 3 5 If we ignore the sign we will have the absolute values of Y_t decrease towards zero but now there will be a positive y_0 a smaller negative y_1 a smaller positive y_2 and so on When the inter industry relations are re established after the initial phase of non-commodity investment the system will exhibit damped oscillation

2 *The solution* $Y_t = At\lambda^t$

The equation (1 5 1) includes a growth term and to describe the oscillations correctly a solution should include an element of growth which is present in this solution otherwise this solution is similar to (1) Now the solution will be $Y_t = A_t$ giving $Y_0 = 0$ $Y_1 = A$ $Y_2 = 2A$, in place of the constant solution $Y_t = A$

(*a*) $A > 0$ $\lambda > 1$ Obviously the system explodes more rapidly

(*b*) Another explosive system will be $A > 0$ $\lambda = 1$

(*c*) $A > 0$ $1 > \lambda > 0$ Here although the λ^t become smaller and tend to zero the value of t increases indefinitely Provided $0 < \lambda < \epsilon < 1$ then eventually the values of $t\lambda^t$ tend to zero for larger values of t The point is that after the few terms of the damping effect of λ^t is more powerful than the explosive effect of t

(*d*) $A > \lambda < -1$ The effect of the factor t is to exaggerate the explosive property of the oscillation which in our system is the I ratio

Let us now combine the results in the form of the following very important solution

3 The solution $Y_t = (A + Bt)\lambda^t$

In this solution two questions are raised First do the different parts of the solution tend to reinforce each other each moving yt in the same way or to weaken each other? Secondly is there some part of the solution which dominates the rest of it when t becomes large? If we note the points discussed in solution (1) and (2) it can be deduced that as commodity investment produces positive oscillation if at the same time there are some non-commodity investments without affecting adverse ly the price-output behaviour of the existing firm industry set up then the result will be a movement in the same direction. Precisely provided A and B are of the same sign then the two parts of the solution reinforce each other a characteristic of the early phase of industrialisation If they are of opposite sign they weaken each other a phase in the economic system as assumed in the present paper Whatever may be the numerical values of A and B eventually Bt is likely to be very large compared with A and the part of the solution due to $Bt\lambda^t$ will become much more important than the part due to $A\lambda^t$ We can write

$$Y^t = (A + Bt)\,\lambda^t$$
$$= A\left(1 + \frac{B}{A}t\right)\lambda^t$$
$$= A\,(1 + ct)\,\lambda^t$$
where $c = B/A$

Now, if A and B are the same sign $C > 0$ and the term $(1+Ct)$ is bound to be positive It also increases as t increases The effect of $(1+Ct)$ is therefore to act on solution (1) in much the same way as t acted upon it in solution (2) If, however, A and B are of opposite signs then C is negative If $/A/ > /B/$, then for small values of t, the bracket $(1+Ct)$ will be positive by decreasing, and will result in a certain damping of the earlier terms which solution (1) would provide Eventually, however, (if $/B/ > /A/$) the expression $(1+Ct)$ will become negative, and increasingly so The result will be to change the sign of the terms in the solution (1) and to introduce an explosive element which will be more than balanced by damping if $/\lambda/ < /1$

Ajit Kumar Dasgupta, elsewhere in this volume, has put forward a very interesting theory of stagnation His theory shows that unless "vanity' element, or whatever one may call it, can be increased, the economy will show a sign of stagnation as new commodities will become scarcer Put into our terminology, it means that we shall have more non commodity investment than commodity investment, that is to say, the two elements in solution (3), instead of reinforcing is likely to weaken each other

The moral of this paper, if any, is that with increasing importance of fiscal policy, planning and all that, the economic variables are developing a high degree of immunity against oscillations and for that matter increasing amount of economic force will be required to overcome resistance and achieve cyclical growth To generalise our conclusion, it can be said that given the initial condition, as in this paper, any tendency of the economic system to move away from the equilibrium position will be balanced by forces which will restore it back to its equilibrium position Now to answer, whether cyclical growth is desirable or not, we require some value judgement which, however is beyond the scope of the present note

References

1 J R Hicks *A Contribution to the Theory of Trade Cycle* (Oxford 1950)
2 cf Evsey Domar "Capital Expansion Rate of Growth and Employment", in *Econometrica* April, 1946
3 cf Alvin H Hansen, *Monetary Theory and Fiscal Policy* (McGrew Hill 1949), pp 143 50
4 cf Domar *op cit*
5 cf James Duesenberry "Hicks on the Trade Cycle" in *Quarterly Journal of Economics* August 1950 p 473
6 The way we define it it is clear that there is very little if any, substitution possibility between different commodities in a given price income set up
7 cf Duesenberry, *op cit*

National Income and the Evolution of Market Forms

I

THE ONE thing that has been troubling the author for a considerable time is the problem of full employment and the maximisation of per capita income at any period of time. That it is difficult is amply proved by the experiences of the underdeveloped countries in their effort to secure just these two things. With the maximum of austerity that these nations find it possible to maintain the rate of economic growth has not been in keeping with the objective nor has the fringe of unemployment problem yet been touched in these countries. Is it that the universe has its own way and men can scarcely influence the course of their destiny?

To me the whole thing was very simple. Let there be a group of people living in a particular territory. I did not have the imaginative vigours of Huxley as he has shown in his *Brave New World* but still I persuaded myself to the adoption of the assumption that somehow or other the people in that society have solved the problem of most material needs so that like air, food, drinks and such other things have become free goods. Either they do not require it or the things are available in abundance so that they do not need to spare any effort to secure those. Of course it does not mean that they were merely practising renunciation commensurate with the highest ideals of Hindu religion surpassing in their way all that the modern Sadhus could ever dream. On the contrary they had definite wants and to satisfy those wants they were willing to pay reasonable price. I mean the society is well within the boundary of economic universe set by Robbins. To simplify matters let us assume that there are only two types of wants and each person in that society feels an urge for only one of those two types. Accordingly the society can be divided into two sub-classes depending on the type of want the members of the sub class have. Let these two types be (1) some persons like to hear the sounds of hand clap, (2) some persons like to see other persons engaged in jumping and other acrobatic feats. If there is no monetary system each set of persons can satisfy their wants only by paying what the suppliers of those wants demand in return and as we have assumed they are not unwilling to pay the price that will be demanded of them. Here is also a tiny problem of employment and income. And this can be solved very easily. The set of persons who like to hear hand claps would be jumping and performing the acrobatics in return of which they would like only to see that the other set engage themselves in clapping

their hands The set of persons who would be so asked to clap would not mind since in return of this they get what they wanted Under such circumstances, if the marginal cost curve does not turn up and the marginal utility curve does not slant down the whole performance can continue round the clock

But still one cannot escape the propositions 'if only those are commodities This brings in a discussion about the definition of an object What actually we would mean by the word commodity, and when we have the meaning, i e when we have the definition of commodity we are still left with the problem of finding suitable elements to fill in the class commodity They very word commodity with its accents on the three consonants *m*, *d* and *t* would immediately bring to mind a feeling of a substance which is hard, solid, and undoubtedly heavy, every quality in strict physical *sense* But *then we can from our commonsense* knowledge of the elements which are commonly put in the commodity box immediately name several objects which have none of those qualities in the physical sense

The question then arises is how can a commodity be defined? It will be appreciated by now that much depends on the nature of definition since in scientific discourses one of the aims of science and commonsense is to replace the shifting objectivity of egocentric particulars by neutral public terms Under normal circumstances definition can be given both *by extension* and *by intension* But when the *class is composed of some* apparently heterogeneous elements extensional definition involves the use of large number of proper names These proper names, if they are not further analysed, shall have to be given ostensively and in that case we have to limit the elements of the class to those which are known ostensively alone This means we have to define each term as say, "this or that eagle This would mean further, the substance that occupies the position to which I am referring now is known as eagle and this is a commodity It will be immediately seen this involves the use of words I now, here (For the phrase, 'the position to which I refer) These are egocentric particulars and accordingly such extensional definition of a class brings us back again to egocentric particulars which we wanted to do away with to resort to neutral public terms Secondly classification by extension would be grossly subjective since every person can form his own class composed of objects which he decides he would put within the class and accordingly such classes would never be allowed to enter into discussions when instead of particulars discussion can be carried on in terms of classes of particulars But since no two classes would be similar though possibly bearing the same class name never actually such classifications would be entertained The purpose of classification which is to simplify analysis would here be completely lost We can never form logical propositions on the basis of such classifications

To avoid the difficulties that we met all classes are defined by their intensions so that once the connotation is known no difficulty is faced in

the denotation of objects within the class On such definition of a class it would be seen we do not restrict the elements of the class to those which are known only ostensively Men whose heights are more than 20 ft *form* a class *which does not contain a single* element but logically it is not impossible that we would have such a class This means on such definition we can keep the class open so that unknown elements may come up some day with the *same connotation* and fill in the class Once, besides we employ this a vast and powerful tool of scientific analysis is opened before us We can employ the system of co ordinates to denote particular objects *within the class so that given the origin* which may be a proper name we can completely dispense with the use of particulars and move into the field of abstract scientific world When such a generalised approach is opened up we no longer remain involved in egocentric particulars so that scientific discussions are no longer marred by semantic confusions The proper names that shall be used to denote the origin may not be egocentric particulars since so long as there are classes of objects which recur there is no reason why all proper names would be egocentric We would therefore instead of speaking the names of the commodities refer to the commodity in question as a point in the vector space We have however, to fix up the axes of the vector space i e we have to specify the vector space itself As is known a given vector space is the totality of all the points spanned by the bases of the vector space the bases of the vector space being formed by the totality of all the independent vectors within the vectors space The bases of the vector space that we have in mind in our case are the different independent qualities that we can conceive are present as qualities in any particular commodity This means given the different qualities that make a commodity in general worthy we can define any particular commodity as a combination of the different amount of the qualities what is the same thing as any point in the vector space can be given by a linear combination of the independent vectors of the space

What is brought out significantly in the definition of this commodity class is that there is no limit to the types of commodities that may be made available So long as the point lies within the given vector space it is as much a commodity as any other point within the same vector space and this without any reference to the dimension of the vector space The commodity class is quite big but there is nothing in the connotation of the class which can prohibit it from being bigger still There is always scope for the production of still newer types of commodities

II

In what follow we would now analyse the nature of economic growth that has obtained in advanced countries and the consequence of this upon the forms of market organisation For this purpose we would employ different hypotheses for the consumers and the producers behaviour

The need for a new utility function is obvious We must take into account the fact that types of commodities that may be available at any point of time are not given so that individual utility instead of being made a simple function of avadable commodity types must also be made dependent upon commodity possibilities The question is very simple Given such a structure of the commodity class what we believe ought to be the shape of the utility function The shape of the function that we would hold is however a hypothesis and its validity would little depend upon certain *a priori* knowledge of its plausibility We have to test the consequence of this hypothesis The traditional hypothesis we reject not on ground that the consequences drawn from the hypothesis have been found to be false but on the simple ground that the universe of discourse has changed so that we are no longer entitled to use that hypothesis any more for the analysis of a separate universe The traditional utility function assumed that the utility depended upon a class of objects which can be defined by extension so that the commodity class they had in mind was composed of exclusively the existing types Utility they held, is a function of this class alone In our case the commodities can no longer be defined by extension any thing may be a commodity that lies within the given vector space and it has nothing to do whether the types are avadalile or not

Let us now spell out our hypothesis about the shape of the utility function of the commodity i e $u=f(X_1\ X_2\ \ X_k\ X_{k+}\ )$ where X_i is any type of commodity It will be seen that beyond X_{k+1} we have left a large space with dots The indication is there are other types of commodities which do not have any extension at present but since these points lie within the given vector space their influence on our utility cannot be neglected The commodity sub class X_i $(i=1\ \ k)$ is given in extension (other qualities of this sub class will be discussed afterwards) In the classical utility function the shape of the utility function is specified by the condition $\underset{i-(1\ \ n)}{\partial U/\partial X>0}$ (we neglect the condition of the second partial derivative imposed on the function by the classicists) In our case we however introduce a non linearity in the function The complete specification of the function in our case could be

$$U=f(X_1\ X_2\ \ X_k\ X_{k+1}\ )$$
$$\partial U/\partial X>0 \qquad \text{for } 0<X<M \ M \text{ a constant but different}$$
$$i=(1\ \ k) \qquad\qquad\qquad\qquad \text{for different persons}$$
$$\partial U/\partial X_i-\partial^2 U/\partial X_i{}^2<0 \qquad \text{for } X_i>M_i$$
$$i=(1\ \ k)$$

This utility function follows from the acknowledgement of the fact that consumption of any commodity requires some time so that there are definite physical limitations to the amount of any commodity that any person can consume at any period of time To take a very familiar example food one cannot take more than a definite quantity in any day however cheap and abundant the supply may be When such an admission

is made the individual demand curve instead of being slanting as in the usual analysis ceases to be existent after a certain point The famous Engel's law which is an empirical generalisation is an example of this principle Even the law of diminishing utility is valid if only it is assumed that the whole operation is confined within a given period of time so that for strict representation of the function time should be introduced as an additional independent variable in the individual utility function On such

$U=f(X, t)$ where X is commodity

and

$$du=\frac{\partial u}{\partial x}dx+\frac{\partial u}{\partial t}\,dt$$

It will be seen that $du>0$ as is commonly held would be true if only $\frac{\partial u}{\partial t}=0$ But this assumption is grossly untrue since as we know the increase or decrease in the consumption period for a given bundle of goods is equivalent to decrease or increase of supply of goods in a given time-period so that the sign of $\frac{\partial u}{\partial t}$ is reverse of the sign of $\frac{\partial u}{\partial x}$ Under such circumstances $du>0$ only if $\frac{\partial u}{\partial x}dx>\frac{\partial u}{\partial t}dt$ But as is assumed $\frac{\partial^2 u}{\partial x^2}<0$, so that even if $\frac{\partial u}{\partial x}dx>\frac{\partial u}{\partial t}dt$ the difference would become continually smaller and at some point it will be zero even on the assumption that $\frac{\partial^2 u}{\partial t^2}\geqslant 0$ What are the immediate implications of this type of function? For one thing the income elasticity of demand for all types of commodities would be less than 1 after a particular level is reached This level however is different for different persons There are definite limits to the demand for different commodities by any person at any period of time Once he acquires that amount even if income increases by leaps and bounds he cannot be induced to purchase any more He would simply not have it Accordingly when the limits for all the types of commodities have been reached in the case of any person at any period of time the surplus purchasing power if he has any would be available for new types of commodities i e a potential demand for reaching such vector points as given by (X_{k+1}) would be set

The demonstration effect which is so much in vogue nowadays and whose influence is too pressing to be neglected follows as a matter of consequence from this As has been shown a potential demand is already set in the case of some persons and would be set in the case of most persons in some other periods so that whenever new types appear within the dotted region of the utility function those are immediately purchased and consumed by those having that surplus purchasing power which they could not employ in the purchase of other commodities The most significant feature of our analysis in this connection is that we have shown how the demonstration can be effective in shaping the consumption pattern of the people

The demonstration effect is really a particular case of a more general pattern of economic change that follows from this analysis and that which is going on in reality This is what we would now be showing To anticipate, we would be showing that the increase in national income over years has been more due to the increase in the vanity component of this income and secondly the different market forms evolved out of this pattern of growth of national income The differences of forms have been due to different reaction patterns of the producers faced with such a situation

In order to understand what we mean by vanity component of a commodity we have to invert our analytical framework Let us define a satisfaction space The vectors which span this space are the different elements which cause satisfaction in the mind Utility which we obtain by the consumption of any commodity is really a compound of different elements Let the different elements of satisfaction be a_i $(i=1, 2, \ldots k)$ so that any point on the satisfaction space may be given by $\sum_i \lambda a_i$ $(i=1 \ldots k, \lambda \geqslant 0)$ (Addition of weight, release of so much erg of Kinetic energy, increase in the tension of blood by so such degrees, increase in the temperature of body by so many degrees, in the case of machines generation of such horse power ability to produce so many calories of heat and such other breakdowns) This satisfaction being the result of consumption of commodity is, therefore, a function of commodity so that this satisfaction space must be a transformation of the commodity space However, there is no reason *a priori* why the dimension of these two spaces would be equal If n be the dimension of the commodity space and k be that of the satisfaction space we may have $n \geqslant k$ Given this, it follows there is a proper sub space in the commodity space whose dimension is equal to k so that the vectors in the satisfaction space are images of vectors spanning the particular sub space of the commodity space It must have been noted that we have not yet specified the dimension of the commodity space the points of which are our commodity types This we did not specify deliberately For one thing this is because we do not know and secondly there is no *a priori* method to ascertain the dimension of this space *A posteriori* we know that all the elements within the space lie on the boundary of it so that the dimension of this space is greater than or equal to the largest dimension of an element so far ascertained But since all the elements so far spanned in reality lie on the boundary there is no *a priori* reason why at all we would maintain the possibility of a strict equality so that the dimension of this space for practical purpose may be taken as quite large

There is however one other feature of this vector space As is well known, any vector space of n dimension can be spanned by the n unit vectors of the space This is because given n linearly independent vectors a_n, each a_i can be expressed as a linear combination of n unit vectors so that in the ultimate analysis the n unit vectors are sufficient to

span the *n* dimensional vector space Now by this unit vector we mean, the vector that carries a point p from the origin to a unit distance in the direction of the vector This means for strict representation of the vector points we require *absolute cardinality in our measurements* In the case of this vector space, however we do not have such cardinal measures for all the vectors so that in many cases the specification of the unit vector is impossible (*But it must not be misunderstood* that since we cannot measure it is immeasurable in principle It simply means that with our present knowledge we do not have any method to measure it In all cases the measurement *is done* by linearly transforming the variable to some other variables and the measurement on the transformed variables is taken as a measurement of the initial variants A case at hand is the heat and temperature or the air pressure and the barometer) But then we do have that sub space within the vector space This sub space is proper in the sense that any point within the sub space can be spanned by the set of linearly independent vectors which form the basis of this sub space The dimension of this sub space is less than the dimension of the vector space The set of unit vectors which span this proper sub space is unambiguously measurable so that any point within the sub space can be strictly located by reference to the sub set of vectors which span this sub space

With this let us now define the element of vanity in a commodity This can be best understood when we make a distinction between the K Type commodity and the present commodity For the physiocrats the commodity consisted only of elements that occupied points within the said vector sub space Any point within this sub space could be reached by a rearrangement of the weights only without the application of new vectors Labour was taken as productive so long as it was needed to move a point within the sub space To move a point from this sub space to a point beyond the sub space required the application of other vectors not contained within the sub set of vectors which span the sub space But since commodity was defined within the sub space only the efforts spent on such movement was dubbed as unproductive

On our part however we have not committed ourselves to such a narrow definition of commodity So long as the point lies within the vector space this would be taken as a commodity Accordingly there is a difference between our commodity and physiocratic commodity This difference between our commodity and the K type component of this commodity measures the amount of vanity included within this commodity Let *p* be a point in the "K" sub space and let this point be moved to a point *q* by the application of a new set of vectors Since this point *q* is reached by the application of new vectors it must not be contained within the sub space The distance in space between these two points gives the measure of vanity that the new commodity contains Since the null vector is included also in the "K" sub space we can always have a measure of $(q - p)$ in space Thus means we understand

by each type of commodity as a physiocratic component covered by an amount of vanity element around it If q is reached by the application of null vectors alone in that case the vanity element would be zero The *points q and p would be identical*

Let us now begin with a situation in which industrialisation has just begun At that point of time the commodity composition consisted mostly of items which can be properly placed within the "K' sub space There may have been vanity elements associated with some types of commodity but *the magnitude of this element must have been small so that* for practical purpose we can hold that the commodity composition consisted of elements which can be put within the "K sub space * Perfect competition is meaningful only when the producers operate within the K' sub space Here homogeneity of the output has a sense It means the commodity types *occupy definite points within the vector space These definite* points can be unambiguously given by the reference to a set of vectors which are all measurable and comparable Costs can be minimised in the sense that by the expenditure of a smaller amount of labour the same point in the vector space is reached If we look into the types of mechanical inventions which highlighted *this period we can find* that in most cases these were to simplify the use of labour in existing types of production So vigorous was this trend that sometimes labourers began to obstruct the introduction of new machines in the production process in fear that displacement of labour by machine would assume greater intensity by such changes in the production process Now machines can displace labour only if machine and labour can perform same activity and this is possible if the end of the production process is to reach the same point in the vector space, or that the co ordinate of the point has not changed, i e it is still given by the same set of vectors

We need not linger at this any more These are all empirical facts and require elaborate research for a correct appraisal of the whole thing But the principal features that we would require for the purpose of our analysis are borne out in clear perspective During the initial years of industria

* The Industrial Revolution is said to have originated in textile industry Mechanical processes were being utilised for the purpose of productive activity but those were not of a scale to usher in the revolution that we are used to call The use of Kay's fly shuttle initiated a larger demand for yarn Accordingly thoughts came to be given on the improvement in the methods of spinning and carding The invention which is largely associated with Industrial Revolution Arkwright's water frame spinning machine Hargreaves Spinning Jenny Crompton's mule and also Arkwright's Carding Machine, were simply to expedite the productive activities so that co-ordination of *demand and supply may be made The other inventions of this period* are closely linked up with the increased speed of industrial activity The rate of production of yarns being made larger than the absorbing capacity in weaving the weaving process came next to be improved Along with these it also came to be realised that speed of activity is directly related to the supply of power and heat having been discovered as a larger source of power attention came to be given on coal mining This led to the improvement in Steam Engines for pumping out water from the pits The Steam Engine of the Newcomen type was in use even earlier than 1778 but by 1790 it was replaced by Watt's design of Steam Engine the cotton textile industry being mostly renovated by 1785

lisation the first k element of our utility function all belonged to the K' sub space and the rapid industrialisation that went on during those years did not significantly change the situation Two things fol lowed from this (1) Because of the ceilings imposed on the demand for these commodities the rate of increase of demand for these commodities was not in keeping with the rate of increase in output that could be achieved (2) Since all the elements belonged to the K sub space there went on a vigorous competition among the producers for a larger share of declining market The result of this competition was there went on a tremendous improvement in the mechanisation of industrial process so that still smaller and smaller expenditure of labour could produce the same type of commodity Commodity types being homogeneous this led to the gravitation of the price to the minimum cost of production The rate of profit as well eventually began to fall The whole effect was so swift and so apparent that writing in the initial years of nineteenth century Ricardo was found to have been grapping with the problem of declining possibility of accumulation of capital Ricardo had his own explanation for such but that underconsumption may have been a cause was not left unnoticed by the economists of those days Significant among them is Malthus In most writings of the first two decades of the nineteenth century we find that this problem of a declining investment opportunity has been raised

This whole situation led to two consequences On the one hand a potential demand for varities accumulated in the hands of the consumers This follows from the nature of the utility function that we have assumed Secondly investment opportunities in the "K sub space declined Under such circumstances all investment that bore fruit must have been in the space beyond the K sub space Once the producers get to know the existence of such a space they are relieved of much hazards of business risk For one thing, there is no competition since the distance between the points within this sub space is not clearly defined Every point within this sub space is different from any point within the K' sub space so that an absolutely new commodity is produced At the same time the elements are non measurable within this region of the vector space so that if such a point ever exists within the given vector space the expenditure of labour has not been unproductive Since at the same time no precise measure ment of all the co-ordinates is possible the expense connected with the crea tion of this bundle of satisfaction is a measure of the net output of this sector So long as the producers can push along this line and neglect the measurable part of the vector space he can dupe the consumers to pay at least the extra expenses connected with this addition of varities in its "K sub structure All that the producers have to do in this connection is to insist on the existence of such a point within the vector space This they do by indulging in elaborate arrangement of advertising Advertisement thus becomes an integral part of such economic activity

Another thing to be noted in this connection is this as new investmen rly

are pushed along this line i e within the non physiocratic sub space these create further opening for investment within this sub space As income increases following increased rate of investment within this sector and the commodities so produced come within the *K* sub space of the utility function potential demand for further vanity bags is generated This means the whole thing is cumulative so long as newer and newer points within this non physiocratic sub space are spanned

In England an escape from the overcast of depression during the first two decades of the nineteenth century was achieved by pushing along this line Of course it is difficult to cite direct evidences to support this But here again we can draw certain inferences from contemporary writings It can be seen that by the middle of nineteenth century the economists got through the state of mental depression which overcast most during the first two decades of nineteenth century In Mill whose book appeared in 1849 we find that he was no longer haunted by the possibility of a declining investment opportunity He appreciates the theory of Ricardo but he was doubtful about the occurrence of the consequence which Ricardo believed to be true We find in him an explicit reference to the fact when innumerable new commodities are being produced there was no warrant for such a consequence [1] The development of the marginal utility theory of value is also a consequence of the economic system that obtained at that time As has been told since within the non *K* sub space where points are not strictly located within the space the amount of expenditure incurred in the production of the output measured the extent of net output there remained the question whether at all the point so reached lies within the given vector space So long as the production was confined within the "*K*" sub space no ambiguity arose in the placement of the output within the sub space The co-ordinates were measurable so that we could immediately locate the point within the sub space. In the physiocratic set up since average cost of producing the same type would be same in all producing units the ratio of the cost of production of any two types of products would give a measure of the ratio of the value of these two products A cost of production theory of value is a natural corollary under such a set up and we had it But as has been told when production is confined within the non *K* sub space such a proposition is not true Value is no longer objectively given since many of the co ordinates which define the point are not strictly quantifiable so that an objective theory of value did not have that immediate appeal The development of utilitarian school of value theory at that time period gives a strong presumption that a large part of the productive activity must have been going on within this non "*K* sub space

Two things follow (1) Growth during this period has been mostly in the vanity region So long as the productive activity remained confined

[1] Mill J S *Principles of Political Economy* pp 747 48 1848 edn Even in 1871 in his 7th edition he maintains the same vein

to the K' sub space the economy became progressively depressed Buoyancy that came in the economy was mostly due to the enlargement of the vanity component of the national income (2) The dynamic factor in this movement has been the rapid frequency with which the non K sub space has been spanned As has been pointed out this cumulation has been possible simply because newer and newer points within this sub space have been reached We may if we like call this zeal with which newer points are reached innovation But it must be understood this innovation has a much more specific meaning than the Schumpeterian innovation which is defined in a most general way as the setting of a new production function

But when this process continues for long two things would follow (1) As more and more points within this sub space are spanned some of the points would come closer These points where they are sufficiently close even though the co-ordinates cannot be strictly quantified are comparable i e they give the appearance of nearly same commodity type If this is so some of the advertised new commodities are put within the K sub class of the utility function by the consumers so that instead of being bailed by the surplus purchasing power which the consumers hold for new vanity bags these are subjected to the demand restrictions of the utility function This means the rate of growth of demand for these commodities does not grow in keeping with the potentialities for the production of these commodities (2) As more and more points within the sub space are spanned the opening for still newer points within the sub space declines so that new investment within this sub space has to be done in established activities or at least the distance between this point and the nearest one is less than that which gives it non comparibility

The two effects are cumulative On the one hand the severity of competition increases following the effect (2) Mixed up with the restrictions on demand for the commodities its intensity further increases The economy becomes once again predominantly depressed while at the same time the degree of competition increases We have again a picture which is nearer to the one we have for the first two decades of the nineteenth century However there is a point of difference between these two In the case of the early nineteenth century the competition was among a large number of producers The reason is quite obvious Monopoly restrictions of the mercantalist period having been broken small producers began to set up as independent producers It is these small producers who went through the Industrial Revolution and naturally the number of producing units were sufficiently large at that time However as industrialisation continued the minimum fixed capital requirement for continuing individual producing units became larger On the one hand continued operation required larger capital while at the same time the rate of profit declined This naturally led to sieving of the producers and not all could get through But those producers who were able to stand this severity were favoured by an uninterrupted run of nearly

hundred years buoyancy so that large capital accumulated in the hands of the producers The process of increasing the size of the industrial units and as a consequence the increasing level of minimum requirements for fixed capital investment continued So that when at the end of the period of monopolistic competition the producers came face to face again to compete they were now giants The competition during this period therefore is not among a large number of small producers but among a small number of large producers

Conclusion

This has been shown all commodities belonging to the K sub space would be forced to operate in a competitive market, so that under present circumstances this would lead to oligopolistic warfare and the consequent gravitation towards the cyst wall of security rather than to the vigorous as is shown under monopolistic competition When we combine this with the present trend of increasing mechanisation of production process to its minutest detail we can at once realise the shape of the things to come All machines are more or less competitive Actually in any production enterprise first the total volume of work pattern is estimated and later an assortment of machines is selected which would be able to perform the work pattern at the least cost The machines of whatever use all belong to "K" sub space since the activities of the machines can all be transformed to the elements in the satisfaction space Indeed, should this not be the case there would have been no production of machines This particular feature of the capital goods when therefore, mixed up with the fact as has been found out by Hoffman that the ratio of net output of capital goods to consumption goods has been continually increasing over the period beginning from industrialisation leads to the inevitable conclusion of a gradual stagnation of the economy It is indeed as if a tree growing by drawing vitality from its own roots so that the larger it grows the nearer becomes the day of its collapse

Queer really is this world If one wants to run after some thing for ever, it must be a mirage There is no moving real object that cannot be overtaken If for continual full employment the rate of investment has to increase a larger part of this investment shall have to be in the vanity region that is for nothing but then people shall have to be forced to the belief that there is after all some thing

References
1 C Singer F Holmyard and others *A History of Technology* (Oxford) Vol IV, pp 78-79 and 277 ff
2. John Jewkes and others *The Sources of Invention* (Macmillan) p 36 ff

Primary Exports and Pattern of International Trade (With Special Reference to India)*

THOUGH the above title gives sufficient indication about the scope and nature of this paper one particular term pattern requires, we think, some clarification It is known that there are two necessary conditions for trade relative differences in factor (input) prices and relative differences in factor requirements in the production of different commodities The famous Heeksher Ohlin approach states *inter alia* that a nation will tend to specialise its production in and export those commodities which require for their production relatively large amounts of those factors which it has in relative abundance and which thus are cheap The trade pattern thus, can be found empirically A country with a certain factor supply combination may be placed in relation not only to one other country but practically the whole world in a system In the final section we shall add further comments on this point

The main implication of a study like the present one is that it helps to appreciate the nature and causes of fluctuations in the balance of payments of primary producing countries in general It has been found that fluctuations in price as well as in volume are the main causes of fluctuations in the balance of payments of primary producing countries It should be noted that some primary producing countries export mainly food products some industrial raw materials and some export both We have dealt mainly with India because it falls in the third group of countries and thus provides a better field for general study Since industrial countries are the major importers of primary products an attempt has been made in the first section to trace price and volume of exports of primary products in conjunction with economic activities of the industrial countries In section two we have tried to infer long term trends in order to trace the pattern of international trade in general

* I am indebted to Mr Ajit Kumar Dasgupta who read an earlier draft of this paper for his helpful comments

An argument may be raised here that it is futile to analyse separately price and volume fluctuations since any change in the former will lead to a change in the latter provided of course the commodity in question is subject to sufficient price elasticity Even accepting the validity of this argument it may be stated that an analysis of export proceeds is required before making such a statement If export proceeds and price move in the same direction and magnitude then the problem loses much of its importance but if it is found that they differ in direction or magnitude then the explanation can be found in the analysis of volume Mainly for this reason we have started our analysis primarily in terms of export proceeds and carried on to price and volume

I

We begin our analysis with an examination of the following table which shows the trend in India's foreign trade during the last phase of nineteenth century and the early phase of twentieth century

TABLE 1

INDIA'S FOREIGN TRADE 1893-94 TO 1907-8

(in million rupees)

Year	*Merchandise only*	
	Imports	*Exports*
1893-94	770 21	1 065 03
1894-95	735 29	1 089 14
1895-96	729 37	1 143 35
1896-97	761 17	1 039 84
1897-98	736 47	976 33
1898-99	721 01	1 128 00
1899-00	753 04	1 090 83
1900-01	762 779	1 041 605
1901-02	815 190	1 212 051
1902-03	787 879	1,258 797
1903-04	848 233	1 498 334
1904-05	966 783	1,541 413
1905-06	1 030 841	1 581 892
1906-07	1 083 076	1 730 820
1907-08	1 298 951	1 735 90

SOURCES *Statistical Abstract relating to British India and Review of Trade of India*

Two factors should be noted here regarding India's export trade during the period covered in the above table Firstly with the establishment and growth of indigenous factory industries manufactures began to bulk in a notable manner among Indian exports Thus the proportion of manufacture exports to total exports which was only 8 per cent in 1870 rose to 16 per cent in 1892 and went up to more than 22 per cent in 1907-08 Secondly though manufactures had been increasing proportionately in India's total exports the newly created industries had not in the least entered into competition with imports but had merely hastened the decay of indigenous handicrafts That is to say the effects of the newly sprung up industries on handicrafts were injurious to India's small scale production In our discussion on import propensity we have pointed out that domestic production could not have influenced much in the earlier stages the import propensity as it did not enter into competition with foreign products The effect of this development on India's balance of payments was however unfavourable as India had to export food stuffs and raw materials to pay for some cheap manufactures The trade relation between Central Europe and India for example shows that India sent rice oilseeds and raw cotton to Germany and Austria taking beet

sugar and a large variety of cheap manufactures of a type which she herself might well have produced [2]

Between 1899 1900 and 1900 01 India's exports were declining This can be explained by the fact that the South West monsoon of 1900 fell below the level of expectation in Western India The ravages of plague were still spreading their devastating havoc there adding to the distress of famine stricken people Moreover all the important industries were suffering from the ague of depression The cotton industry was doubly hit by (1) high price of cotton and (2) depressed yarn market Ten industry faced difficulties due to its exclusive dependence on London market [3] The subsequent change in monsoon and good harvests increased export receipts

A depression of foreign origin was visible during 1908 09 The spring harvest of 1907 had been generally indifferent particularly in Northern India and when the failure of the South West monsoon occurred famine conditions declared themselves over a large area [4] The high price of foodgrains robbed the people of purchasing power that would have otherwise spent on other imports The depression set in world market mainly out of the banking failure in America in the late 1907 depressed India's exports Moreover there was also precipitated in India an exchange crisis during 1907-08

The year 1909 10 marked the first definite stage of recovery as the following table will show

TABLE 2

INDIA'S TRADE OF MERCHANDISE

(in lakhs of rupees)

Year	*Imports*	*Exports*
1909-10	1 17 06	1 84 50
1910-11	1 21 35	2 05 69
1911 12	1 38 57	2 21 82
1912 13	1 61 00	2 41 35
1913 14	1 83 25	2 44 20

SOURCE *Review of Trade of India* (relevant years)

The reasons for a positive balance of payments during this period were rise in exports and failure of imports to keep pace with The former was due to (1) good monsoon in India and (2) failure of wheat in America cotton in Egypt and oilseeds in Argentina This failure of supply from other competing countries decreased the what we may call degree of competition We shall take up this factor in our discussion of fluctuations later

[2] Dr Vera Anstey *Economic Development of India* p 333
[3] See for example *Indian Trade Journal* (relevant years)
[4] *Review of Trade of India 1907 8* p 1

The following table recalculated on the basis of prices prevailing in 1900-01, will give a clearer picture of India's foreign trade

TABLE 3

INDIA'S FOREIGN TRADE—1900-01 TO 1913-14

(in lakhs of rupees)

Year	*Imports*	*Exports*
1900-01	76 27	1 04 16
1901 02	81 52	1 29 56
1902-03	87 95	1 38 13
1903 04	92 53	1 80 14
1904 05	99 80	1 83 78
1905 06	1 03 08	1 69 10
1906-07	99 02	1 54 40
1907 08	1 07,50	1 48 45
1908-09	1 21 26	1 23 06
1909 10	1 13,51	1 72 01
1910-11	1 13 92	2 00 76
1911 12	1 17 72	2 02 24
1912 13	1 32 10	2 06 39
1913-14	1 50 35	1 96 62

(The above is recalculated on the basis of prices prevailing in 1900 01 The index numbers of prices are given in the *Index Number of Indian Prices—1861 1926* Department of Commercial Intelligence and Statistics India)

In 1914 The First World War broke out, and terminated in 1918 A writer writes on the effect of the war as follows "An examination of the proportional gain or loss of the principal countries leads to the conclusion that India has been one of the worst sufferers from the War, so far as foreign trade is concerned [5] About the reasons the most general one was the shortage of tonnage The unfavourable geographical position of India far away from its foreign market was another factor

The following table shows the effects of war

TABLE 4

INDIA'S FOREIGN TRADE—1914 15 TO 1918 19

(in lakhs of rupees)

			In 1913-14 prices	
Years	*Imports*	*Exports*	*Imports*	*Exports*
1914 15	1 37 93	2 44 20	1 37,23	1 94 85
1915-16	1 31 99	1 77 48	1 04 75	1 86 95
1916-17	1 49 63	1 92 56	88 02	2,02 65
1917 18	1,50 42	2 37 10	71 28	1 86 75
1918 19	1 69 03	2 33 44	63 07	1,59,55

SOURCE *Review of Trade of India* (relevant years)

[5] Panandikar S G *Economic Consequences of the War for India* pp 53 54

In analysing the factors causing the set back let us first take monsoon In the past it played a very significant role as it plays now But during the period under consideration though not satisfactory monsoon was fair on the whole and could not be the real cause of dwindling exports On examination it appears that the disaster was mainly caused by terms of trade the ratio of export price to import price During 1913 14 to 1918 19 terms of trade for India was as follows

TABLE 5

	1913 14	1914 15	1915-16	1916-17	1917 18	1918 19
Imports	100	101	126	170	211	268
Exports	100	102	103	177	125	150

It can be said unhesitatingly that during the war terms of trade were extremely unfavourable to India

There were other reasons for the dwindling balance of payments during the war period For example

(1) cessation of commerce with enemy countries and their occupied territories
(2) virtual stoppage of trade with such allies as Russia
(3) restricted trade with neutral countries
(4) imposition of import and export duties

Apart from these exogenous factors domestically India was hard hit by the combination of labour unrest and of congestion and confusion of railway traffic—which rendered it extremely difficult to carry coal from the fields to the industrial areas—was to affect India's industrial activity and thus indirectly volume of exports and imports Moreover bad monsoon checked a major item of export food and unfavourable terms of trade restricted the expansion of imports The position of foreign trade during the war period can be seen from the following table

TABLE 6
INDIA'S FOREIGN TRADE—1913-14 TO 1922-23
(in 1913-14 prices)

	1913-14	1919-20	1920-21	1921 22	1922 23
Imports	193	101	142	124	138
Exports	244	198	172	182	214

SOURCE Rav P *India's Foreign Trade* p 116

The most important feature of the above table is that though export trade showed signs of recovery from 1921 22 even in 1922 23 the pre war level was *not* reached Moreover the process of recovery was very slow Secondly though exports increased from 1921 22 imports declined in

1921-22 after an improvement in 1920 21. Here we shall try to explain the factors responsible for this development in India's foreign trade Since India s trade relations have had much to do with European and American situation, it will be worth surveying the then condition of Europe and America

By the end of 1918 the peoples of Central Europe were starving and agricultural output was so low that there was no prospect of their being able to feed themselves for a long time Moreover, most of Europe was completely denuded of raw materials by the war and the end of the war was followed by a boom, and an acute shortage of raw materials But in the ensuing scramble countries with sound financial resources, such as *U K and U S A , got the lion's share. It shows that the primary exporters* could have improved their balance of payments further had there been less financial destruction of the majority importers These Central European countries were able to get the raw materials they needed only when a slump had set in

In U S A and Western Europe there was no such acute distress There it was expected that the curtailment of war demand would give rise to slump, which was, however, unfounded By March 1919 a slight recession gave way to a boom of astonishing dimensions Increased purchasing power, universal desire to replenish stocks, deficit budgeting and to some extent low interest rate, all contributed towards the boom, which collapsed when raw materials and foodstuffs, which accumulated overseas during the war for lack of shipping, began to arrive in Europe Credit restriction, and increased production strengthened the slump Prices began to fall in March 1920 and within next two years, were halved [*] U K had a major share in India's exports The relative stagnation of U K at a time when several other countries were forging ahead, had unfavourable effect on India's exports The slow recovery of United Kingdom after the 1920 slump is attributable mainly to deflation The decision to return to the gold standard at the pre war rate was taken as early as 1919 and stringent credit conditions hindered recovery The slow recovery in trade was mainly because the war had damaged the pre-war network of trade

From 1925 to 1929 the period was a fair one In this period world production of foodstuffs and raw materials increased by 11 per cent and world trade by 19 per cent, world manufacture proved particularly buoyant, increasing by as much as 26 per cent The pattern was set by U S A Their imports, especially of raw materials, increased. Here again U.K's recovery was negligible The following table shows the production of manufactures in U K and India

[*] A detailed account can be found in the League of Nations publication *Economic Fluctuations in the United States and the United Kingdom 1918 22*

TABLE 7
ANNUAL INDICES OF MANUFACTURING PRODUCTION
1913=100

Years	*U K*	*India*
1925	86 3	132 0
1926	78 8	144 7
1927	96 0	151 5
1928	95 1	133 0
1929	100 3	157 3

(Compiled from *Industrialisation and Foreign Trade* League of Nations, pp 134 35)

Following Dr Chang s formulation of Export elasticity of imports , it can be said that as U K s export trade was hard hit, for instance, cotton lost its export markets because of growth of Indian domestic production and of Japanese competition in the Far East, her propensity to import decreased and for that matter primary exports of underdeveloped countries, as India India s balance of payments suffered also from the fact that her major exporter, U K charged a very high price For example, taking 1913 as 100, the average of export prices for 1927 29 was France 101, Italy 123, Switzerland 149, and U K 162 This leaves no room for doubt that British prices were too high '

U K 's return to gold standard in 1925 was an incident of much importance The importance lies in the new feature of the standard different from the old, that is to say, the new standard was different from the old in that a large number of countries held as reserves foreign exchange in

TABLE 8
AVERAGE TARIFF LEVELS 1913 AND 1925

	1913 *per cent*	1925 *per cent*	*Increase per cent*
Spain	33	44	11
U S A	33	29	– 4
Argentina	26	26	0
Australia	17	25	8
Hungary	18	23	5
Czechoslovakia	18	19	1
Italy	17	17	0
Canada	18	16	– 2
India	4	14	10
Sweden	16	13	– 3
Austria	18	12	– 6
France	18	12	– 6
Germany	12	12	0
Switzerland	7	11	4
Belgium	6	8	2
Denmark	9	6	– 3
Netherlands	3	4	1
U K	0	4	4

' See, League of Nations, *Review of World Trade*, 1927 29

place of or in addition to gold This however put heavy strain on London and New York, but the strain, it was proved ultimately was too severe for U K to sustain and she was forced to abandon the gold standard

Though the unstability of the Gold Exchange Standard was not realised at the time there were anxiety about other obstacles to international trade for example growth of tariff A League of Nations calculation[8] (Table 8) shows how tariffs had grown since 1913

A conference held at Geneva in 1927 raised some hopes about the curtailment of tariff but the news of proposed tariff increase in U S A diminished the hopes Tariff increases after 1929 were bigger than ever

So far as India's domestic economic activity is concerned it is clear that the favourable monsoon of 1922 and equally satisfactory seasonal conditions in subsequent years till 1928 29 put her in a satisfactory position Term of trade also became favourable as can be seen from the following figures

TABLE 9

	1913	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929
Imports	100	237	214	169	190	180	158	148	136	133	128
Exports	100	140	127	140	145	154	152	132	130	127	118

So it may be concluded that at the background of economic and political stability of Europe and stabilisation of world's currencies and exchange good monsoon coupled with favourable terms of trade helped India maintain a steady balance of payments though the pre war level was not regained until 1928 29 for reasons mentioned already

Then came the great depression of 1929 To explain the reasons of the collapse is outside the scope of our study Here we shall only confine ourselves to the consequent effects of the depression on India's balance of payments

First let us take the price factor The index of prices of commodities entering world trade fell from 1929 to 1932 by 56 per cent for raw materials 48 per cent for foodstuffs and 37 per cent for manufactures[9] It shows that primary producing countries were placed in difficulty some were driven off the gold standard in 1930 or forced to take other measures to curtail their international payments measures which started a train of restrictions on international trade and harmed industrial producers as well If we take the sequence of events in the international sphere they were as Prof Lewis puts it contraction of lending the fall of prices the contraction of trade the monetary crises[10] The contraction of foreign investment caused a sharp curtailment in the imports of

[8] See League of Nation *Memorandum on Tariff Level Indices*
[9] League of Nations *Review of World Trade* 1933
[10] Lewis W A *Economic Survey* London 1950 p 57

borrowing countries The result was the debtor countries had suddenly to convert import surplus to export surplus as Germany, or from low export surplus to larger export surplus for example five countries—Argentina, Australia Austria India and New Zealand—increased from +119 in 1929 to +239 in 1931 (in millions of dollars)

Most of the debtor countries were primary producers and they suffered also from fall in primary prices which like the decline in investment had begun before the American slump but which moved much more swiftly after October 1929 These countries found increasing difficulty in balancing their international accounts especially as part of the export proceeds was required for fixed interest payments

As a result of curtailed demand for primary products and manufactures world trade was bound to contract

TABLE 10
PRODUCTION AND TRADE 1929-37

	1929	1932	1937
Foodstuffs			
World trade	100	89	93.5
World production	100	100	108
Raw materials			
World trade	100	81.5	108
World production	100	74	118
Manufactures			
World trade	100	59.5	87
World production	100	70	120

The decline of world trade was however greater than the decline of production except in the case of raw materials The principal reason for this is that trade contracted not only because of the slump and the decline of foreign investment but also because the reaction of most countries to the depression was to increase the barriers to trade Restrictions were applied especially to imports of food and imports of manufactures [12]

Let us examine India's position in some details The main question is whether the depression originating in America affected the Indian balance of payments through the foreign trade multiplier or India was affected by her own domestic economic activity Our contention is that India was suffering from falling prices prior to the depression and the world wide depression aggravated her position Whatever be the effects of the world depression which started in the Autumn of 1929 it appears that the prices of the primary commodities had been slowly falling since the beginning of 1926 so that, even there were no crises in 1929 it is likely that India would have suffered from a mild agricultural depression As it is the world depression had aggravated the situation

[11] League of Nations *World Economic Survey* 1931-32 p 172

[12] "We thus do not agree entirely with Dr Madan who says that the lag in trade behind production was due to self sufficiency See his *India and Imperial Preference* Oxford University Press 1939 pp 16-17

Production in India cannot very profitably, be taken as a measure of activity in the case of agriculture because here virtually the same area is cropped every year so that the production is practically independent of the price obtained or the supply of resources from the subsistence to the market sector was less price elastic [13] In other countries farmers increase production when price fall to keep up their income In India it is not possible for want of land and capital The following table shows some thing to appreciate our above analysis

TABLE 11

AREA UNDER CROPS IN BRITISH INDIA (IN 1 000 ACREAGE)

Years	*Food crops*	*Non food crops*	*Total*
1928 29	200 269	51 189	251 458
1929 30	200 218	49 839	250 057
1930 31	202 700	48 067	250 773
1931 32	205 014	46 547	251 471

SOURCE *Indian Trade Journals*

The fall in non food crop is more than made up by food crop The fall in the former is due to the fact that since foreign countries are the main consumers of these crops, fall in export leads to the fall in acreage In the case of jute, the fall in price has been such that the price has become lower than the money cost of production (*Bengal Jute Enquiry Report*) In view of this constancy it is difficult to establish any cycle in our agricultural production

It is not however, possible to point to a particular month to show the start of the depression For instance, the individual commodity prices were falling since 1926 secondly prices fall not merely as a result of actual change in supply and demand conditions but also in anticipation of such changes thirdly it is not possible to ignore the seasonal factor

The following table shows that a mild agricultural depression set in as early as 1927

[13] This refers to total production and not particular crops In fact it has been found that annual percentage variations in acreage (A) and deflated prices (P) are connected roughly by the equation given below with their respective correlation coefficient (r)

Cotton	$A = 1\,656 + 0\,261P$	$r = + 0\,6$
Linseed	$A = 4\,2 + 0\,57P$	$r = + 0.57$
Groundnut	$A = 12\,2 + 0\,45P$	$r = + 0.52$

(SOURCE Sinha and others *Indian Cultivators Response to Prices* Sankhya Nos 1 2 3 pp 155 65)

The equations relate to the period 1900 29 for cotton 1900-28 for linseed and 1901 25 for groundnut The form of equation is not satisfactory as it might lead one to suppose that even if there is no change in price ($P=0$) acreage would change considerably cf Fisher *Statistical Methods* p 156

TABLE 12

INDICES OF WHOLESALE PRICES (CALCUTTA)

Years	*Cereals*	*Pulse*	*Oilseeds*	*Other food articles*	*Raw jute*	*Raw cotton*
1926	105	95	94	105	120	88
1927	105	99	100	107	93	100
1928	100	100	100	100	100	100
1929	94	97	109	103	95	88
1930	75	76	90	88	63	55
1931	59	57	58	71	49	50
1932	51	59	54	64	45	55
1933	50	55	51	58	41	48
1934	52	55	66	63	40	44

SOURCE *Indian Trade Journals*

Towards the end of 1932 the economic indices began to move upward Restrictions on imports were also relaxed As the prices of primary products revived balance of payments position of several countries improved

A point may be raised however about the rate of growth in exports There is a view that the rate of expansion of Indian Exports was higher throughout this period in spite of Imperial Preference and other restrictive measures The reason according to this view, was the dependence of European countries on India s exports [14]

Our opinion is however that though there was a recovery in the international situation it was not complete except in a few countries, and the process was very slow indeed Thus at the heights of the boom there were over 5 000 000 unemployed in the U S A and over 1 000 000 in the U.K Though consumption revived investment lagged behind due to large accumulated capital equipment which hung over the investment market Taking 1932 as 100 the indices of industrial production for 1937 are France 114 U K 171 and U S.A 194 Moreover we have noted earlier that U K s imports of some specific primary products depend on her exports of some specific manufactures It means a direct correlation exists between U K s imports and exports U K s quantum of exports taking 1927 as 100 was 106 in 1929 66 in 1932 and only 88 in 1937 So it may be argued that had the recovery been a bit more quicker and U K s exports higher the primary exporters including India would have gained more through increased exports

In the second half of 1937 prices started to drop again This fall in prices especially agricultural coupled with the separation of Burma from India affected the latter s balance of payments adversely

No specific figures about the war time balance of payments of India are available Information is however available about the acquisition of sterling balances which would seem to make good the absence of data regarding the balance of payments The following table shows the acquisition and disposal of sterling by the Reserve Bank of India

[14] League of Nations *Review of World Trade* 1938

TABLE 13

ACQUISITION AND DISPOSAL OF STERLING

Sources	*Sept* 1939 *to March* 1940	1940-41	1941 42	1942-43	1943-44	1944-45	1945-46
Acquisition—							
(1) Balance held by Reserve Bank at the beginning of the year	64	142	144	284	511	945	1,363
(2) Sterling purchased by Reserve Bank	86	76	99	127	145	142	138
(3) Sterling payments by the Secretary of State	16	43	199	310	365	357	342
(4) Other sterling credits		4	2	3	9	12	15
Total available for disposal	166	265	444	724	1,030	1,456	1,858
Disposal—							
(1) Sterling utilised for sterling debt repatriation	22	89	110	160	16	14	
(2) Sterling commitments on account of Govt.	2	32	48	48	67	74	73
(3) Sterling sales to public			2	5	2	5	61
Total sterling holdings	142	144	284	511	945	1,163	1,724

SOURCE *Reserve Bank's Report on Currency and Finance, 1945 46*, p 42

Huge accumulations of sterling balances signify a positive balance of payment Improvement in export prices and fall in imports coupled with heavy invisible items contributed towards this positive position The balance of payments was further strengthened by repatriation of sterling debt and thereby reducing the payment for services and other interest payments

The improvement in the balance of payments was further possible due to increased industrial activity in India For instance of the total value of merchandise exported manufactures improved their position from 30 per cent in 1938 39 to 51 1 per cent in 1944-45 while raw materials declined from 45 1 per cent to 25 6 per cent The trend was reversed in the case of imports These trends may be taken to be an indication of India's war time industrialisation

A question may be raised that increased exports of manufactures were due to war time scarcity of tonnage pre occupation of supplying countries with the war etc and the reason for the percentage increase in raw material imports was due to large extent in the imports of petroleum which was clearly for war purpose

To this type of argument it may be pointed out that granting the shortage of tonnage and other factors the simple fact that India exported larger volume of manufactures is a clear indication that she increased her capacity to produce and actually did increase her industrial production as the following figures will show

TABLE 14

INDIA'S INDUSTRIAL PRODUCTION (1938-45)

Industry	*Unit*	1938	1940	1941	1942	1943	1944	1945
Finished steel	000 tons	702	886	1 000	923	947	934	954
Cotton piecegoods	Million yds	4 306	4 092	4,531	4 025	4 751	4 852	4 711
Jute manufactures	000 tons	1,266	1,234	1 194	1 278	1 084	1 115	1 086
Sulphuric acid	000 cwts	485	731	874	784	864	804	734
Paints	000 cwts	572	728	1 064	1 055	1 105	1 141	1 030
Paper and paper boards	000 cwts	1 164	1 698	1 854	1 810	1 792	1 927	1 944

SOURCE *Report on Currency and Finance* Reserve Bank of India 1951

Secondly about imports it may be pointed out that apart from a slight fall in metals and ores other raw and industrial materials such as raw wool chemicals dyes and colours etc show an increase Moreover it is interesting to note that the import of oils shows the highest figure only in 1944-45 a year after the war It is our contention that the increased

oil imports though to some extent necessitated by war demand were due to an important extent for development of transport

Coming to the post war development we find fairly close correspondence has been maintained between payments and receipts under the current account up to 1948 The partition of the country and the effect of reimposed import controls towards the later half of 1947 caused the value of imports of merchandise to fall It may be noted that up to 1948 India had a positive balance on private account and non monetary gold movement played a very insignificant part However the pre war feature of a regular deficit on service account reappeared though in a mild form due particularly to the interest accruing on the sterling assets of the Reserve Bank of India

India however changed her position from export surplus to import surplus The percentage of her imports to exports has been rising as follows

TABLE 15

VALUE OF INDIA'S EXPORTS AND IMPORTS

(Exports as percentages of Imports)

Year		*Year*	
1938	107 •	1948	78
1946	90 •	1949	84
1947	89	1950	106

• Undivided India

SOURCE U N *Economic Survey of Asia and the Far East* 1950 p 315

The partition of India had its share in this disbalancing of foreign trade As observed in the Survey "The quantum index shows that India's exports after partition were only about 66 per cent of the pre war figure Partition reduced India's export capacity in the two major exports jute and cotton The index in 1948 dropped to 58 per cent of the pre war level On the other hand the volume of imports by 1947 had already reached 94 per cent of the pre war level (p 320)

The following table gives the quantum index of trade

TABLE 16

Year	*Exports*	*Imports*
1946	66	80
1947	66	94
1948	58	94
1949	62	97
1950	66	83

One reason for this drop in India's exports was that the British Commonwealth and the U S A were buying only two thirds of India's former exports while India was purchasing from them 80 to 90 per cent of her

former imports Moreover, in recent years, imports of food and raw cotton play a dominant role in India's import surplus and negative balance of trade

One further point should be mentioned here It concerns the relative price changes of various classes of goods Compared with 1938 primary goods, in general, have increased substantially more than the price of capital goods Comparison of U K and U S A unit value indices for exports of classes of goods that are broadly representative of capital goods, with the unit value indices for their imports of primary goods is indicative of the general situation The following table shows this

TABLE 17

Item	1937=100		1938=100	
	1947	1948	1947	1948
United Kingdom				
Imports of primary goods	238	273	251	287
Exports of capital goods	216	234	210	228
United States				
Imports of primary goods	195	215	235	281
Exports of capital goods	177		179	
Exports of finished manufactures	180	190	182	192

SOURCE U.N., *Relative Prices of Exports and Imports of Underdeveloped Countries*, 1949 p 9

The problem is, however, since the price of primary products was higher than that of capital goods, why could India not improve her balance of payments position instead of deteriorating The answer is that though primary prices were favourable, it does not mean that every underdeveloped country which exported primary goods was able to buy more capital goods from the U K or U S A for a given quantity of its products than in the pre war years By comparison with 1938, more underdeveloped countries were favourably positioned than compared with 1937 Price changes among the various primary goods which different underdeveloped countries export and the various capital goods which they import have been highly diverse The underdeveloped countries exporting primarily non food materials tended to be considerably worse off than those exported food If 1937 is taken as standard of comparison, then it cannot be said that exporter of primary materials — as distinguished from food stuffs — obtained their capital goods on more advantageous price terms India, clearly falls on the group of non food exporter, and moreover, she is a large importer of foodstuffs It explains the inability of India to take advantage of price increase of primary products To add, among the capital goods, copper manufactures, textile machinery and industrial

chemicals increased in price more than the average of primary materials Underdeveloped countries in general did not import much of these commodities to affect their terms of trade whereas India was a large post war importer of industrial chemicals These two reasons explain why India suffered when other underdeveloped countries exporting non food primary products improved their balance of payments

As was the case after the First War a considerable pent up demand for consumption goods and capital goods for replacement purpose was inherited by India from the Second War This inflationary potential was reinforced by substantial government budget deficits during the immediate post war period the Korean War boom during 1950-51 and a high level of investment particularly in stocks during 1951 52 These resulted in high level of imports particularly of raw jute raw cotton food and machinery

Rise in price of exports during 1950 52 increased the value of exports compared with exports during 1948 50 A part of this was in the nature of adjustments after the devaluation in 1949 The major part however was due to the Korean War boom and the price level of exports in 1951 52 was the highest reached in the post war period With the passing of the Korean War influence and government s policy of regulating exports as a part of the measures to disinflate the economy the volume of exports rapidly declined

As a result of favourable change in the terms of trade the value of exports during 1949 50 and 1950-51 was higher than imports and as a result trade deficit narrowed down In 1951 52 there was a larger increase in imports than exports and the trade deficit again widened

The foregoing survey shows inter alia that terms of trade play an important role in generating fluctuations in primary exports The following table shows more precisely the extent to which some major primary products sustained in the world market during 1901 to 1950

TABLE 18

Commod ty	*Import unit Values*—1901 to 1950 *(average percentage fluctuation per year)*
Copper	15.5
T n	39 9
Sod um N trate	4.5
Rubber	20 7
Wool	14 7
Cotton	18 4
Silk	14 4
Jute	16 1
Linseed	18 2
Tea	8 1

SOURCE U N *Instabilit y of Export Markets of Underdeveloped Countries*

Price fluctuations of such magnitude as is shown in the above table, can easily render terms of trade extremely fluctuating to primary exporting countries But can we take unfavourable terms of trade and economic activities of the industrial countries as the main explanatory variables for the pattern of primary exports? A closer analysis however will show that we cannot Because world exports of primary products have been declining in spite of the fact that world trade and for that matter world production in manufactured articles has been increasing The following figures bring out the contrast more clearly From 1850 to 1913 world production of primary products increased steadily at about 3 2 per cent per annum and from 1876/80 to 1913 the cumulative annual increase in manufacturing production was 4 1 per cent in trade in manufactures 3 3 per cent and in trade in primary products 3 4 per cent [1]

World production and trade in primary products increased in almost exact proportions but world trade in manufactures lagged behind world production of manufactures World production and trade in primary products moved in just opposite way as is shown in Table 10 To some extent this was obviously due to the growth of trade obstacles but there were other long term factors also Looking at the problem conceptually there are two main trends to be examined The first is the demand for primary products A falling rate of growth of primary demand from industrial countries might so move the terms of trade against such products that primary producers were compelled to industrialise And secondly if the supply of primary products fails to grow rapidly industrial countries will be driven to depend on their primary production To those trends we shall now turn our attention

II

In our discussion so far we have assumed that in the short run trade in primary products is dominated by the demand of industrial countries As a whole, a primary producing country may trade with another one but is likely to do less trade with it than it would do with an industrialised country But it leads to the question of the level of international trade and prosperity at home and abroad Even if two countries are not tied together by a common gold standard or by exchange rates fixed at some arbitrary parity conceivably they may still be dependent one on the other for the maintenance of prosperity within their own borders The degree of dependence would seem to be determined by the importance of exports and imports in the economy of each nation Any change in spending however in one country may not lead to change in exports of another country Everything seems to depend on whether it is domestic goods import goods or export goods that feel the brunt of the decline in

[1] See League of Nations *Industrialisation and Foreign Trade* also Snyder C "New Measures of Trade and of Economic Growth" *Journal of Royal Statistical Society* Jan 1934

spending on the part of the citizens of the country in question Obviously primary exporters will feel the impact of change in spending on both domestic and imported goods in the industrialised countries Another point should be noted here Raw materials specially perishable agricultural commodities are unlike manufactured goods in that they are usually thrust on the market for whatever they will fetch (in the absence of governmental intervention) and hence illustrate the case of a vertical supply curve Moreover if a country exports raw materials and imports finished goods and if the export commodities have very little domestic demand then there cannot be any indifference curve for these goods and imported finished commodities Trade of this nature is sometimes called colonial trade The available evidence clearly shows that the trade relations between the primary exporting countries like India and the industrialised countries like U K and the U S A have had the characteristics of colonial trade The most striking feature of this trade rather notorious one is that the prosperity of colonial countries is dependent on the prosperity of the big industrial nations This is more true to those countries where export earning is the major component of the national income Though up till now export earning has not reached that magnitude in India still her prosperity in the export industries has been closely tied with the economic growth of the industrial countries The main problem therefore is the rate of growth of demand of industrialised countries As industrial investment creates demand for primary products then by definition a decline in the former will lower the demand for the latter Though the evidence is not conclusive yet a pattern can be traced out of it One important factor of investment rate of interest however does not throw much light on the problem The theory states that the rate of interest depends on the demand for and supply of funds even then lower rate of interest may not necessarily be due to lower demand but might equally be due to a larger supply Moreover in U K interest rate has not shown a secular tendency to decline

Evidence on savings though scanty shows that since 1898 it is declining steadily at least in U S A * Colin Clark shows in U K savings per head as related to real income per head increasing as a percentage of income up to an income of about 1 200 international units and there after declining [17] It shows that as countries grow they invest after a while a smaller part of their income

The more important factor is however the growth of population The rate of population increase has been declining for some time among most European peoples since 1881 in U K and U S A Though this finding is not conclusive we can say that at present there seems to be a tendency for the increase of populations in industrialised countries to decline and there should be a corresponding decline in the rate of growth

* Kuznets S *National Product since 1869*
Clark C *The Conditions of Economic Progress* p 406 Also see his *The Economics of 1960* p 118

of their production Moreover as real income increases the demand for services grows more rapidly than the demand for primary and industrial products Colin Clark[18] has shown that at the highest levels of real income the percentage of the population engaged in industrial production tends to decline and it supports the view that the rate of growth of industrial production should decline as countries mature Coming to industrial production itself we can say that though the indices of industrial production is distorted by defective weighting there seem to be enough evidence to support the argument that as industrialisation proceeds a point is reached beyond which the rate of growth shows a secular decline So coming to our original problem we can now say that as the demand for primary products depends on the growth of industrial production in developed countries the demand increases at a declining rate due chiefly to falling population growth

Coming down to individual items we consider here food and raw materials—main primary products Prof Lewis argues that the demand for food does not grow proportionately with income Naturally rise in income results in lower food exports from the primary producing countries[19] In our opinion Prof Lewis is partially correct There is another side of the picture The increase in any primary producing country's population tends eventually to reduce its exports in relation to its output Eastern Europe and India were both large grain exporters both ceased to become so because their population increased and ate up the exportable grain surplus Thus both rise in industrial countries income and primary producing countries population tends to decrease food exports

Similar forces are at work with raw materials With technological progress new methods are found to economise the use of raw materials with the aim of getting the same commodity from a smaller amount of material Though unlike foodstuffs there is no limit to the possible expansion of demand for raw materials as costs fall nevertheless the fact remains that with technical progress a unit of output requires a smaller volume of raw materials[20] The present position in world trade is that food drink and tobacco amount to about 17 per cent (by value) against something like 23 per cent in the 1920's raw materials are about 14 per cent as compared with nearly 20 per cent thirty years ago All manufactures together excluding chemicals have however risen from 44 to 52 per cent of the total while foodstuffs raw materials and fuels have fallen from 18 to 38 per cent of it This shift towards manufactures reflects the increased industrialisation of the world It is also due in some measure to the fact that many of the goods which are of increased importance in international trade and production generally (automobiles for instance) are of higher value in relation to the raw materials which go into them

[18] *Ibid* p 29
[19] Lewis W A *Economic Survey* p 184
[20] This trend is clearly shown in *National Incomes and International Trade* by H Nesser and F Modigliani Chap 1

than is the case with textiles, which were formally of greater importance relatively to other goods than they are now In other words, more is added by manufacture to the raw materials in the newer industries than in the older ones, so that the demand for raw materials tends to increase less than the demand for finished goods

Thus, if taken together, a tendency for the rate of industrial growth to decline, and a tendency for the ratio of growth of primary demand to industrial growth also to decline, it is but expected of the demand of old industrial countries to show a long term decelaration Moreover, obstacles imposed by tariffs cannot be overlooked

The more important trend, however, is the industrialisation of under developed countries The main finding is that as industrialisation pro ceeds, a country becomes a net importer of primary products and a net exporter of manufactures This trend is shown clearly in the following table with respect to India

TABLE 19
INDIA'S IMPORTS AND EXPORTS
(*Value in crores of rupees*)

Year	Food Drink and Tobacco		Raw Materials		Manufactured Goods	
	A	B	A	B	A	B
			Imports			
1936 39	24 00	15 7	33 16	21 7	92 79	60 6
1945-46	22 25	9 3	116 57	48 5	97.53	40 6
1946 47	38 74	13 4	74 96	26 0	167 56	58 1
1947-48	46 03	11 6	92 27	23 1	252 90	83 4
1948 49	112 94	28 8	127 65	23 6	297 75	51 8
1949-50	122 76	21 9	144 30	25 6	288 65	51.5
1950 51	106 67	16.8	198 33	35 1	258 25	45 7
			Exports			
1938 39	39 43	23 3	76 28	45 1	50 72	30 0
1945 46	58 44	22 1	84 85	32 1	114 68	43 4
1946-47	59 43	18 6	106 20	33.3	149 10	46 7
1947-48	76 78	19 1	126 26	31 3	196 64	48 8
1948-49	87 55	20 7	98 64	23 3	234 79	55 5
1949 50	115 88	24 6	104 26	22 1	249 61	52 9
1950-51	132.51	23 7	116 43	20 8	307 55	55 0

A=Value *B*=Per cent share

(Calculated on the basis of figures published in *Reserve Bank Report on Currency and Finance* 1948 49 p 84)

It is very impotant to note the increased import of manufactured goods, which were composed of machinery and other capital goods The share of raw materials increased from 25 8 per cent in 1949-50 to 35 1 per cent in 1950 51 Import of raw materials increased continuously in value term The same thing happened to other countries For example, counting in millions of dollars the U S A in 1885/88 exported net 250 primary products and imported net 142 manufactures, and by 1936/38

she imported net 246 primary and exported net 519 manufactures [21] So it can be said the level of international trade depends mainly on this process More industrialisation will result in higher demand for primary products

The most obvious effect of the growth of domestic industries is a reduction in imports of the type of goods that the new industries produce The effect of this upon the country s foreign trade is usually offset to a greater or less extent, however by an increase in imports of capital equipment plus varying proportions of the raw materials which constitute the input of the new industries Whether the forces making for an increase in total imports are greater than those tending to curb imports is a question which cannot be answered in advance but according to one source (League of Nations *op cit* p 91) at least in the absence of restrictive commercial policies and currency disorders imports of manufactures tend to be *stimulated by the industrial growth of the less developed countries* In some cases this is a consequence of the entry of workers into the market economy with an increasing part of their consumption imported in response to demonstration effect or competitive prices Moreover the necessity to import arises from the import content of the investment programme or the need for particular raw materials for which no convenient substitutes are available Dr Prebish s model shows that imports necessarily rise with economic development [22] We should not however take these observations with a bit care

A study on Latin America by the U N shows the changes in the proportions of imports by classes and the relation of each class of imports to disposable income in the 1920 s as compared with the period 1948 to 1953

VALUE OF IMPORTS BY CLASSES AND RELATED TO INCOME FOR LATIN AMERICA

TABLE 20

CLASS OF IMPORTS AS A P C OF TOTAL IMPORTS BY VALUE

Years	*Consumption goods*	*Capital goods*	*Raw materials*	*Fuel*
1925-29	47.5	33 1	13 1	6 3
1946-53	32 1	39 4	19 4	7 1

Imports as a per cent of expenditure

Years	*Import of consumption goods to consumption*	*Import of capital goods to investment*	*Import of raw materials*	*Import of fuel to consumption*
1925 29	12.5	57 0	3 4	1 6
1946-53	5 7	37 6	3 4	1 6

SOURCE *Analysis and Projections of Economic Development* U N Part 1 p 14

[21] These figures are from *Industrialisation and Foreign Trade* League of Nations p 100

[22] See R Prebish s comment on Myrdal s "Towards a More Closely Integrated Free-world Economy" in R Lekachman (Ed) *National Policy for Economic Welfare at Home and Abroad* (N Y 1953) Also *A Study of Trade Between Latin America and Europe* (U N)

But these data appear to be strongly influenced by the experience of Argentina, at least as far as the declining share of consumer goods are concerned. Another U.N. study shows remarkably different pattern for Argentina, Brazil and Mexico in consumer goods and raw materials, for somewhat different years

VALUE OF IMPORTS BY CLASSES FOR SPECIFIED COUNTRIES

TABLE 21

CLASS OF IMPORTS AS A P C OF TOTAL IMPORTS BY VALUE

Year	Consumer goods	Capital goods	Raw materials	Fuel
		Argentina		
1937 39	40	32	20	8
1947-49	21	44	25	11
1950-52	12	38	31	19
		Brazil		
1937 39	42	32	17	10
1947-49	35	41	12	12
1950-52	35	40	13	13
		Mexico		
1937-39	32	38	28	2
1947 49	29	51	16	4
1950-52	30	50	17	3

SOURCE *Process and Problems of Industrialisation in Underdeveloped Countries* U, 1955, p 114

It thus appears that the Prebish model may not apply to every country in Latin America today, nor is it relevant to each Asian country The case of India in short, is this the First Five Year Plan put its emphasis food production partly perhaps with the implicit view of a balanced programme of investment in which increased food output was needed stabilise the price of the wage good before one could expand industr output India appears to have operated partly on the assumption th the long run terms of trade would favour over industrial products—a Colin Clark rather than a Prebish position With high income elasticity for food and investment attention given to the agricultural sector, the marginal propensity to import operated negatively Increased food production raised income, and, as income rose, the demand for imports shifted downward since home production was a substitute for imports The role of restrictive import policy cannot be ignored however Import content of investment is high due to the investment emphasis given in the Second Five Year Plan

NILOY MAZUMDAR

Analysis of India's Terms of Trade, 1948 60

AN ATTEMPT is made in this paper to study the movements of different types of terms of trade of India during 1948-60 The main purpose of this paper is to explain the changes in the terms of trade that have taken place in that period

The paper is divided into the following sections

(*i*) Introduction Here a brief discussion of the various concepts of the terms of trade is made
(*ii*) Terms of trade and its effects on national income and the movements of certain types of terms of trade are discussed in this section
(*iii*) Devaluation and its effects on the changes in the Indian terms of trade are studied in section 3
(*iv*) The relationship between the business cycles and the terms of trade is dealt here
(*v*) Conclusions
(*vi*) Appendix

I

The concept of the terms of trade has raised a great deal of controversy in the literature of economics Some critics have gone to such a length as to suggest that no research should be made for the determination of net barter terms of trade that is the ratio of export prices (unit value) to import prices (unit value)[1] Again some protagonists of the concept have attempted to determine the growth and welfare effects of a change in the terms of trade[2] Therefore it may not be futile to examine at the beginning the views of the experts on this subject

It has often been asserted that net barter terms of trade do not give the actual position of the trading country For instance although the net barter terms of trade of the primary producers are on the decline for a long period still this price relationship fails to depict the technological improvements that have taken place in the manufacturing countries, whereby the machinery of the present day has become more efficient than the same kind of machinery say ten or twenty years ago[3] Thus a

[1] Staehle H., "Some Notes on the Terms of Trade" *International Social Science Bulletin* Spring 1951 Vol. III No 1
[2] Kemp M C., "Technological Change the Terms of Trade and Welfare" *Economic Journal* 1955
[3] Morgan T., "The Long Run Terms of Trade between Agriculture and Manufacturing", *Economic Development and Cultural Change* October 1959

primary producer selling one rupee worth of cereal in 1960 would get in return manufactured products vastly superior in quality than what he used to get in say 1930 or 1940 The price ratio between exports and imports therefore does not convey the real gain or loss from trade to the primary producers[4]

The above arguments seem to be somewhat faulty and illogical First of all there is no valid reason to assume that technological improvements have always been greater in the manufacturing industries than in the primary producing industries If the qualitative improvements have indeed been very great in the manufacturing industries as suggested by some renowned economists then the primary producing countries could have done away with a large quantum of imports particularly of capital goods and durable consumption goods thereby reducing the aggregate money value of imports provided obviously the pattern of primary producers demand for imports remains unaltered This undoubtedly would have improved or at least kept constant the terms of trade position of primary producing countries if the qualitative improvements in manufactures were accompanied by falling or unchanged prices But actually we find the terms of trade of the primary producing countries have been deteriorating throughout this century with very few exceptions This evidently shows that primary producers have generally paid a higher price for the so called qualitative improvements in manufactured goods and if that be the case it is not at all necessary that terms of trade of primary producing countries should take account of any such improvements in manufactures

Again it is sometimes immaterial for the primary producers whether qualitative improvements have taken place in manufacturing industries or not For example it does not affect a Malayan planter who purchases a motor car in exchange of rubber which he exports whether or not new gadgets have been added to the car He would have to purchase the new car all the same even if no technological improvement took place over the model which he previously possessed Therefore it seems to be immaterial whether the changes in the net barter terms of trade do take account of technological improvements that take place in manufactures

What is true for consumption goods may also be true for capital goods in a different way The new machinery which the primary producer imports may be more labour saving and more efficient than the old one He may secure a higher productivity per unit of labour and thus the price of his product may come down But will that enable him to secure a large increase in the value of the output that he exports? Probably the answer is no unless the price elasticity of foreign demand for his product is very high and no other country exporting the same product or its substitute has bought the same machinery for its production

On the other hand if the price elasticity of foreign demand for the

[4] Haberler Gottfried Introduction" *Review of Economics and Statistics* Supplement February 1958

products of primary producer is low and all the primary producers use new machinery that reduces the cost of production, price of primary products will decline, and this in turn will adversely affect their rate of exchange with manufactures. In fact one of the reasons for ever widening gap in the living standard of the primary producers and the manufacturing countries lies in continuous lowering of the price of primary products due to increased efficiency of the machinery that they have to import from the foreign countries. Thus the technological improvements of the products imported by the primary producers are not always beneficial to them at least from the point of view of changes in their terms of trade.

Last of all, and this is the most important argument, the technological improvements of the manufacturing countries have lowered their demand for the imports of primary products as the input mix of the output has changed to such an extent that one unit of manufactured commodity can now be produced with a comparatively small quantity of raw materials.[4] This decline in the demand for raw materials will invariably lower the real income of the primary producers. Thus the assertion that the trends in barter terms of trade do not reveal the benefits accrued to the primary producers due to technological improvements in the manufacturing industries overlooks the baneful effects which technological progress can have on the former. Unless we can prove that the gains of the primary producers from the improvements in the qualities of import goods are greater than the loss resulting from the adverse effects on their income on account of the decline in the use of the primary products by the manufacturing countries it is immaterial whether or not net barter terms of trade adequately allow for improved qualities of manufactured goods.

Net barter terms of trade do indicate the gains from trade of a particular country in spite of assertions of certain economists to the contrary. It is frequently observed that a ratio which pays attention merely to the movements of import and export prices disregarding the changes in the volume of export and import will not help much to assess the actual gains from trade. Consequently the experts have introduced the concept of "gains from trade".[5] Symbolically it may be written as $Qx\,(Px/Pm - 1)$ or $Qx\,\frac{Px}{Pm} - Qx$ where $Qx\,\frac{Px}{Pm}$ is the income terms of trade and Qx is the volume index of exports. We have found out that India's net barter terms of trade and the gains from trade moved in the same direction between 1948 and 1960. In other words whenever the gains from trade of India increased the net barter terms of trade improved when the former worsened the latter also decreased (Table 1). Even

[4] Cairncross and Faaland "Long-term Trends in Europe's Trade" *Economic Journal* 1952.

[5] Kindleberger uses the concept in his monumental work *The Terms of Trade A European Case Study*. He acknowledges to have taken this concept from United Nations *Repercussions of Changes in Terms of Trade on the Economies of Countries in the Process of Development*.

when the gains from trade remained unaltered over the previous year, the net barter terms of trade also remained unchanged But it should also be added that this positive co-variation of changes in the net barter terms of trade and gains from trade is not peculiar to India alone Professor Kindleberger has given the net barter terms of trade, income terms of trade and gains from trade of eight West European countries, viz United Kingdom, Germany, France, Italy, Netherlands, Belgium, Sweden and Switzerland for five key years, viz 1872, 1900, 1913, 1938 and 1952, and there too, the net barter terms of trade and gains from trade had *moved in the same direction 38 times out of 40* possible movements which meant that in 95 per cent of cases they had positive covariation[1] Therefore, an improvement in the net barter terms of trade adequately reflects the gains from trade, provided no wide fluctuations do take place in the volume of exports

The positive covariation between terms of trade and the gains from trade in most cases does not overrule the possibility of their moving in opposite direction For instance if the terms of trade move up from, say, 120 to 130 while the volume of exports is lowered down from, say, 100 to 5, the former and the gains from trade will obviously move in the opposite direction But such wide (or wild?) fluctuations in the quantum of exports without affecting the export price index and that, in turn, the terms of trade itself, are indeed rare Otherwise, nagative correlation between terms of trade and gains from trade, rather than the positive one would have been the rule Therefore, net barter terms of trade can be used to measure the gains from trade for all practical purposes

TABLE 1
NET BARTER TERMS OF TRADE AND GAINS FROM TRADE OF INDIA 1948 60
(BASE 1952-53 = 100)

Year	*Net Barter Terms of Trade*	*Gains from Trade*
1948 49	107	+ 7
1949-50	113	+12
1950-51	114	+15
1951 52	130	+36
1952-53	100	0
1953-54	100	0
1954-55	110	+10
1955 56	103	+ 3
1956-57	103	+ 3
1957-58	96	− 4
1958 59	97	− 3
1959 60	105	+ 6

SOURCE *Monthly Abstract of Statistics*, Cabinet Secretariat

If we accept the thesis that net barter terms of trade correctly indicate

[1] Kindleberger *Terms of Trade A European Case Study* Tables 12-2 and 12-5, pp 284 and 290

in most cases the gains from trade, we can determine the income effects of a change in net barter terms of trade[8] For example, if export constitues, say, 50 per cent of the national income of a country, deterioration of the terms of trade by 25 per cent from the base period will reduce the national income by 12½ per cent Now, this can be illustrated in the following way Suppose the national income of Utopia is Rs 400 crores As export income is 50 per cent of the national income, the national income due to export of goods will be Rs 200 crores A movement of the net barter terms of trade from 100 to 75 will lead to a decline of income from exports by Rs 50 crores, from Rs 200 to Rs 150 crores Hence national income of Utopia will decrease by 12½ per cent due to 25 per cent decline in the terms of trade

An improvement in the terms of trade will, therefore, have some expansionary effects on the national income of a country Conversely, a deterioration in the terms of trade will have adverse effects on the growth of national income The logic behind this is as follows When the terms of trade become favourable, a country obtains the same quantity of imports by giving a lesser quantity of exports in comparison with the previous period The surplus in export may be consumed in the home country or a larger quantity of domestic resources may be set free for economic development In either case, national income will increase due to a favourable movement in the terms of trade[9]

The net barter terms of trade can also be used as one of the indicators that will help in determining the export or import policies of a particular country If for instance a country suffers from adverse terms of trade for a long period while transport costs and production costs of her exports remaining constant, it may be advisable for it to give more emphasis on the production of commodities other than export goods, particularly when the said adverse movement is the outcome of changes in the world demand for her commodities Therefore, the study of net barter terms of trade is not a total wastage as some economists are prone to believe

Income terms of trade have been accepted as the index which measure the "capacity to import of a country"[10] Ely Devons points out that the income terms of trade i e a ratio of value of exports and the average price of imports have certain advantages

(i) it takes account of the quantity of goods exported and the changes in the average values of both exports and imports, and
(ii) the index gives a clear picture of what imports can be purchased from the income obtained from the exports"[11]

[8] *Ibid.*, p 294
[9] U.N., *Relative Prices of Exports and Imports of Under-developed Countries*, 1949
[10] Dorrance G S., "The Income Terms of Trade" *Review of Economic Studies*, 1948-49
[11] Devons Ely, "Statistics of the United Kingdom Term of Trade", *Manchester School* September, 1954

It must also be added that income terms of trade do not actually measure the gains from trade as they fail to indicate real income changes for a country For instance, 'if the export price level remains unchanged while the quantity of export increases, and the price of import also rises proportionately, the index will not change Yet simple static indifference curve analysis tells us that these are precisely the conditions under which an individual would be worse off'[13] The use of income terms of trade is to find out whether there has been any improvement in the capacity to import a country's exports over the previous year, and, therefore, it is unfair to condemn it for its failure to measure real income changes of a country

The gross barter terms of trade, on the other hand, represent a ratio of *the quantum of exports to that of imports of a country*[15] *The ratio* incidentally was first used by Taussig It gives us a relationship between actual volumes of exports and of imports

We have discussed at length certain concepts of the terms of trade and have come to the conclusion that they are not as useless as some think them to be Some well known economists want that terms of trade should explain particular economic phenomena and whenever that could not be done they do not hesitate to declare the concept as unnecessary But this is a wrong approach to examine the usefulness of a concept Professor Rostow has pointed out that terms of trade should pose questions and not be expected to answer them[16]

India's net barter terms of trade income terms of trade, gross barter terms of trade and the gains from trade of the period 1948 60 are analysed in the sections that will follow in the light of above discussion We have strictly followed the accepted authorities regarding the concepts and have not attempted to introduce any new one whatsoever[18] Further, we have chosen 1952-53 as the base year because, first of all, the year 1952 is accepted as a key year by all economists,[16] secondly, Professor Rostow thinks that take off in India has begun in that year,[17] and so it will be interesting to analyse the effects of economic activities of the last phase of the pre take off economy as well as the first few years of the take off on the movements of India's various terms of trade, and lastly data are easily available from various government publications if we choose that year as the base year

II

It is expedient at the outset to examine the magnitude of India's economic development between 1948 and 1960 Table 2 gives us a bird's eye view

[13] Baldwin Robert E "Long term Trends in International Trade" *American Economic Review* May 1955
[15] Viner J *Studies in the Theory of International Trade* New York, 1937
[16] Rostow W W *The Process of Economic Growth* Chap IX
[16] Kindleberger *op cit* Dorrance *op cit* Rostow *op cit* Viner *op cit*
[18] Kindleberger *op cit*
[17] Rostow W W *The Stages of Economic Growth* 1960 p 38

of the rate of increase of the national income, real national income and industrial as well as agricultural production during the period

TABLE 2

INDEX OF NATIONAL INCOME, REAL NATIONAL INCOME, AGRICULTURAL PRODUCTION, FOODGRAINS PRODUCTION AND INDUSTRIAL PRODUCTION, 1948 60*

(BASE 1952 53=100)

Year	*National Income Index*	*Real National Income Index*	*Agricul tural Pro duction Index*	*Foodgrains Production Index*	*Unit Value Production Index*
1948-49	87	92	100	97	83
1949-50	91	92	96	97	82
1950-51	96	91	94	89	81
1951 52	102	83	96	90	96
1952 53	100	100	100	100	100
1953-54	107	105	112	117	102
1954-55	97	100	115	113	109
1955-56	102	112	114	114	117
1956-57	115	114	121	118	128
1957-58	118	109	112	106	132
1958-59	127	117	128	126	135
1959-60	127	110	124	123	144

*For explanation regarding the construction of the index numbers, please see the appendix

SOURCE *Monthly Abstract of Statistics*

It is interesting to observe that the changes of India s index of national income has in most cases coincided with that of the output of foodgrains during the period under consideration Industrial production has increased throughout the period, except during 1949 51 but the same cannot be claimed of agricultural or foodgrains production The declines in national income in the years 1952-53 1954 55 and 1955-56 can be explained in terms of a decrease in foodgrains output In 1950-51 and 1957-58, national income increased, although agricultural production and the output of foodgrains diminished Again, the decline in agricultural as well as foodgrains production did not lead to a simultaneous decline in the national income in 1959 60 But the indices of real national income do reflect fluctuations in the production of foodgrains even in those

of real national income did not necessarily coincide with duction of foodgrains The indices of real national income ains production remain unaltered during the period 1948 1 1950-51 the indices registered some decrease Again, in dex of real national income fell by 8 percentage points, but the production rose by one percentage point over the previous year 1955-56 the index of real national income rose by 12 points over the year 1954 55 whereas the foodgrains produc-

tion rose by only one percentage point in the same period These anomalies were the result of fluctuations in the indices of wholesale prices, which, in turn, mainly depended on the movements of prices of food articles The changes in prices of food articles, again, were a function of food production and import of foodgrains from abroad Hence, the importance of foodgrains production to our real national income cannot but be admitted

Agricultural, particularly foodgrains, production has played the most important role in the economic growth of India during the period 1948 60 But we need not conclude from this phenomenon that the expansion of industrial production or an improvement in the terms of trade has had no impact on the changes of India's national income On the contrary, an improvement in the terms of trade or industrial production will have some expansionary effect on the national income, although the real magnitude may be very small

The impact of a change in the net barter terms of trade on real per capita national income of India is given in the Table 3

TABLE 3

CONTRIBUTION OF CHANGES IN THE TERMS OF TRADE TO REAL PER CAPITA NATIONAL INCOME OF INDIA, 1948 59*

Year	*Real Per Capita National Income (in rupees)*	*Due to changes in Net Barter Terms of Trade over the preceding year*
1948 49	252	
1949-50	249	+0 75
1950-51	245	+0 15
1951 52	227	+2 74
1952-53	260	−2 72
1953-54	270	0
1954 55	254	+1 30
1955-56	283	−1 65
1956-57	283	0
1957 58	266	−0 37
1958 59	282	+1.5

* For the method of construction of this table see the appendix

It will be observed that the country gained by a favourable movement in the terms of trade during the year 1949-52 owing mainly to post war reconstruction of Europe and the Korean boom In 1952 53, each individual in India lost nearly three rupees in the real terms on account of an adverse change in net barter terms of trade, and incidentally, this adverse change was entirely due to the collapse of the Korean boom There were no changes in India s net barter terms of trade in 1953-54 and 1956-57 and as such the impact of a change in the net barter terms of trade on real per capita national income was nil It should also be

pointed out that the net effect of changes in the terms of trade on per capita real national income of India during the period 1948-59 was very small Further, since the introduction of the plans, the country has gained only eighty naya paise in real terms per capita because of favourable movements in the terms of trade The above-mentioned gain was, in fact, the result of favourable movements of net barter terms of trade in 1951-52, the peak year of the Korean boom Otherwise, we lost rupee one and ninety four naya paise in real terms due to changes in net barter terms of trade since 1952-53, when the effects of planned economic development were really felt for the first time

The meagreness of the impact of changes in terms of trade on our per capita real national income could be explained by the fact that the ratio of real value of India's export to real national income was always very small * The real value of India's export rose to 8 per cent of real national income only in 1951-52, otherwise it generally fluctuated between 5 and 6 per cent of real national income

Income Terms of Trade

We have already drawn our attention to the fact that income terms of trade measure the capacity to import of a country In other words, it gives us an insight into what our export goods can purchase from the foreign market However, this does not give us a country's total capacity to import as the value of export of its services and the net balance if any, of its capital account are excluded altogether Nevertheless it is worth while to estimate the extent to which India's export commodities are capable of obtaining foreign products

In Table 4 the trade balance income terms of trade and the volume of exports unit value of exports and the gains from trade are given It can be seen from the table that the movement in the trade balance is not related to that in the income terms of trade Between 1948 and 1960 income terms of trade moved in conformity with movement in the volume of exports in seven cases, and inversely, in two cases Again, income terms of trade and the gains from trade moved in the same direction in six cases, and in opposite direction in two cases during the same period Therefore, it may not be rash to say that changes in the income terms of trade are the product of changes in the volume of exports and gains from trade But the impact of a change in the volume of exports on the income terms of trade is somewhat greater than that in the gains from trade

* Value of export was deflated by export value deflator to determine real value of exports

TABLE 4

INDIA'S TRADE BALANCE GAINS FROM TRADE INCOME TERMS OF TRADE VOLUME OF EXPORTS AND UNIT VALUE OF EXPORTS 1948-60 (BASE 1952-53=100)

Year	*Gains from Trade*	*Income Terms of Trade*	*Trade Balance (in lakhs of rupees)*	*Volume of Exports*	*Unit Value of Exports*
1948-49	+ 7	99	−175 08	92	84
1949 50	+12	106	− 25 17	94	85
1950-51	+15	120	− 7 48	105	93
1951 52	+36	126	−238,24	90	142
1952-53	0	100	−124,52	100	100
1953-54	0	100	− 80 61	100	92
1954-55	+10	115	− 63 91	105	98
1955-56	+ 3	118	−116 50	115	90
1956-57	+ 3	113	−229 13	110	94
1957-58	− 4	113	−400 57	117	94
1958-59	− 3	105	−229 79	108	93
1959 60	+ 6	125	−223 79	119	91

SOURCE *Monthly Abstract of Statistics*

From 1948 to 1951 both income terms of trade and the gains from trade had shown remarkable increase owing to post war reconstruction of Europe and the Korean boom of 1950-52 But the expansion in the volume of exports was not as spectacular during this period The volume of exports in fact contracted in 1951 52 when the so called Korean boom had its highest expansionary effect on the world market During 1951 52 unit value of export rose by 49 percentage points net barter terms of trade by 16 percentage points and income terms of trade by 6 per centage points but the volume of exports declined by 15 percentage points The decrease in the volume of exports was the primary reason for a relatively small rise in the income terms of trade in 1951 52

Between 1956-59 there was some decline in income terms of trade which might be due to slight recession in the importing countries as we shall see in a different section In 1952-53 we find a drop of 26 per centage points in income terms of trade thereby demonstrating the effects of the Korean boom to be greater than that of planned economic development on it i e income terms of trade

Since the beginning of planned economic development in India income terms of trade have improved over the previous year three times out of eight possible times whereas the volume of export increased five times Thus the volume of exports has more or less shown a continuous trend of improvement and has remained at a level higher than that in the base year in six of the eight years after 1951-52 whereby showing that our capacity to export did not altogether have a deteriorating trend in the plan periods

trade

Net Barter Terms of Trade

The relationship between net barter terms of trade and the trade balance of India reveals that the latter is influenced by changes in the former Out of eleven possible cases, the two moved in the same direction in seven cases and in opposite direction in two cases Again, the trade balance moved in conformity with changes in the volume of exports in seven cases, and against in three cases Thus, we may conclude that improvements in the net barter terms of trade and the volume of exports will lead to a betterment in the position of trade balance On the other hand, *the relationship between trade balance, and the gross barter terms of trade* and the indices for the volume of imports show that any increase in the *last two is likely to deteriorate the former The details are given in the* Table 5

TABLE 5

COVARIATION OF CHANGES IN TRADE BALANCE, AND GROSS BARTER TERMS OF TRADE AND THE VOLUME OF IMPORTS OF INDIA, 1948-60

TRADE BALANCE AND GROSS BARTER TERMS OF TRADE

POSITIVE COVARIATION = 4 NEGATIVE COVARIATION = 7

TRADE BALANCE AND THE VOLUME OF IMPORTS

POSITIVE COVARIATION = 3 NEGATIVE COVARIATION = 8

(POSITIVE COVARIATION CHANGES IN THE SAME DIRECTION, NEGATIVE COVARIATION CHANGES IN THE OPPOSITE DIRECTION)

TABLE 6

TRADE BALANCE, NET BARTER TERMS OF TRADE, VOLUME INDICES OF EXPORTS AND IMPORTS AND UNIT VALUES OF EXPORTS AND IMPORTS 1948 60 (BASE 1952 53=100)

Year	Trade Balance (in lakhs of rupees)	Volume		Net Barter Terms of Trade	Unit Value	
		Exports	Imports		Exports	Imports
1948-49	−175,08	92	114	107	84	78
1949-50	− 25 15	94	131	113	85	75
1950-51	− 7,48	105	100	114	93	81
1951-52	−238 24	90	135	130	142	101
1952-53	−124,52	100	100	100	100	100
1953-54	− 80 61	100	93	100	92	92
1954-55	− 63,91	105	110	110	98	89
1955-56	−116 50	115	116	103	90	87
1956-57	−229,13	110	137	103	94	91
1957-58	−400 57	117	142	98	94	97
1958-59	−229,79	108	12_	97	93	95
1959-60	−223,79	119	145	105	91	96

SOURCE *Monthly Abstract of Statistics*

It is, therefore, of great importance for a developing country like India to raise the net barter terms of trade and the volume of exports But, unfortunately, their improvements are not adequate during the period under consideration as shown in the Table 6

Ever since the Korean boom, the net barter terms of trade have never increased spectacularly save in 1954 55 The changes in the unit values of exports and imports were relatively low and so the net barter terms of trade did not move significantly The volume of exports, on the other hand, have registered a steady increase from 1952-53 except for the years 1956 57 and 1958 59 But the volume of imports have also registered a marked rise ever since 1953 54, primarily because of import dependent economic development of our country Even when the volume of imports declined in 1958 59, it remained exceptionally high when compared with the base period These phenomena completely explain the reasons for continuous adverse trade balance of India during the plan periods The inadequate improvements in the volume of exports and the net barter terms of trade, therefore, did not produce any noteworthy effect on the growth of India s national income

III

Professor Robertson points out, a country which regards as in its best interest to seek to restore equilibrium in its international accounts by devaluing its currency must accept the resulting deterioration in its commodity terms of trade' [11] Let us now examine how far Professor Robertson's observation is justifiable in the light of changes in India's commodity terms of trade due to the devaluation of 1949

Great Britain devalued the pound sterling by 30 per cent on the 18th September, 1949 immediately after the Washington Conference of three powers, viz Great Britain, United States of America and Canada All the sterling area countries except Pakistan and Canada and Belgium followed her India also devalued her currency by 30 per cent in terms of American dollar

It may be observed that India's net barter terms of trade, income terms of trade and the gains from trade showed distinct improvements in the

[11] Robertson D H, "The Terms of Trade" *International Social Science Bulletin*, Spring 1951 Vol III No 1
Professor Robertson s view is obviously an oversimplification In fact whether depreciation will cause worsening of terms of trade or not depends upon the elasticities of demand for exports and of supply of imports "We shall accept the classical presumption that devaluation deteriorates the terms of trade because "countries specialise as exporters and generalize as importers so that the demand for their exports is less elastic than the supply of their imports" The classical presumption should be applicable in the case of India for two reasons (*a*) India is a primary-producing country and as such the classical case is valid for her (*b*) The production of tea and jute in India which constitute her most important export goods, forms a substantial part of world production and hence any changes in their price are likely to affect the prices in the world market Therefore we can assume th Professor Robertson s pronouncement on the relationship between terms of trade devaluation should be applicable to India

year 1949-50 when the rupee was devalued Even in 1950-51, the above-mentioned foreign trade indicators registered further improvements contrary to much publicised thesis that terms of trade deteriorate with devaluation (See Table 7).

TABLE 7

NET BARTER TERMS OF TRADE, INCOME TERMS OF TRADE, GAINS FROM TRADE, VOLUME INDICES OF EXPORTS AND IMPORTS AND GROSS BARTER TERMS OF TRADE OF INDIA, AND UNIT VALUE OF EXPORTS, 1948-53 (BASE 1952-53=100)

Year	Net Barter Terms of Trade	Income Terms of Trade	Gross Barter Terms of Trade	Volume		Gains from Trade	Unit value of Exports
				Export	Import		
1948-49	107	99	123	92	114	+ 7	84
1949-50	113	106	107	94	131	+12	85
1950-51	114	120	95	105	100	+15	93
1951 52	130	126	150	90	135	+36	142
1952-53	100	100	100	100	100	0	100

SOURCE *Monthly Abstract of Statistics*

But the gross barter terms of trade diminished in both the years, 1949-50 and 1950-51 in comparison with the year of 1948 49 The volume index of imports also declined by 31 percentage points in 1950-51 over the previous year The volume index of exports showed a rise of 11 percentage points in that year over 1949-50 Further, even in 1949-50, the quantum of exports registered slight increase in comparison with the year 1948-49 (see Table 7) The fall in the gross barter terms of trade and the rise in the volume index of exports in the years of 1949-50 and 1950-51, and the decline in the quantum of imports in 1950-51, were probably the consequences of devaluation to a great extent

The rise in India's certain foreign trade indicators does not *ipso facto* disprove the notion that devaluation adversely affects the net barter terms of trade of the devaluing country First of all, India s devaluation of 1949 was against dollar only and the relationship between rupee and other soft currencies remained unaltered Further India s exports to sterling area and the dollar area constituted 53 and 30 per cent, and imports, 61 and 33 per cent respectively of the total value of exports and imports in the year 1949 50 Thus the enhancement of the value of dollar in terms of rupee had a comparatively little effect on India s foreign trade indicators Secondly the rupee was devalued in the middle of September, 1949 and as such only six months were left in the financial year of 1949-50 to face the repercussions of devaluation, and this was relatively a short period to influence decisively the movements of the terms of trade Moreover, the Korean War broke out in June, 1950 resulting in a sudden rise in the foreign demand for India's exports, and thus the effects of devaluation could not affect the terms of trade in the same way in which they would otherwise have done if foreign demand

remained unaltered Lastly devaluation took place in a period of increas ing prices and rising demand in Europe Now, as the elasticity of India s supply of export goods was relatively low unit value of her exports did not diminish as the after effect of depreciation of her currency but it maintained the rising trend till 1952 53 and this must have prevented the much anticipated deterioration in the terms of trade These reasons explain why the devaluation of 1949 failed to affect adversely India s net barter terms of trade and other foreign trade indicators

Thus we may come to the conclusion that the notion "devaluation deteriorates commodity terms of trade need to be qualified by adding that such devaluation must result in depreciating the home currency with respect to the currencies of those countries which import bulk of the home country s export and there must not be any sudden expansion of world demand for goods due to extraneous circumstances

IV

There exists some relationship between business cycles and the terms of trade The general" pattern of the terms of trade for an industrially developed country is that they deteriorate in prosperity and improve in depression [18] The explanation for the above pattern lies in the fact that the supply of primary products is comparatively inelastic in the short run and therefore increased (reduced) demand caused by prosperity (depression) in the industrially developed countries gives rise to increases (decreases) in the price of primary products and so their terms of trade deteriorate (improve) in prosperity (depression) Thus it is very likely that the terms of trade of primary producers should improve in prosperity and worsen in depression We shall examine in this section the behaviour of India s terms of trade from 1948 to 1960

Europe and America have witnessed very few fluctuations in their economy after 1948 In fact cyclical experiences in the post war Europe and America were far more modified in comparison with those of the period 1925 38 [19] It may also be added that American recessions were relatively more severe than their counterparts in European countries The United States of America had to face recessions in 1949 1954 and 1958 during the period under consideration The recession of 1949 was mainly due to the completion of the post war reconstruction of that country The recession of 1954 again in the United States was the pro *duct of virtual termination of the Korean boom of 1950-52 The recession* of 1958 was probably due to a huge surplus in agricultural production

In Europe on the other hand there was a slight fall of output in some countries in 1948-49 but the biggest post war recession in Europe took place in 1951 52 The end of the Korean boom and the stingent anti

[18] Kindleberger *op cit* p 150
[19] Madd son Angus *The Post War Business Cycles in Western Europe and the Role of Government Policy* Banca Nazionale Del Lavoro June 1960

inflationary policies of the European governments caused the depression there in 1952 Europe also had to face a mild recession in 1958 which was also the outcome of the anti inflationary policies of the respective governments to check the intensity of investment boom of 1954-57 The United Kingdom it may further be added experienced long stagnation from 1955 to 1958 owing primarily to governmental policies to check inflation. But the recession of 1958 forced the British Government to remove the restraints on economic activities in 1959 and, so in that year their total consumption rose very sharply

In India, not unlike Europe, the wide fluctuations were more or less controlled by the governmental policies Moreover the planned economic development of the country has brought about sustained economic growth Still there were slight fall in the national income when compared with previous years in 1952-53 and 1954-55 In 1955-56 the aggregate national income was higher than that in the previous year even then it did not reflect the trend of growth witnessed since the beginning of planned economic development The index numbers of wholesale prices and the consumer price index numbers also registered some decline in 1952-53 1954-55 and 1955-56 Therefore it would not be wrong to say that mild recessions took place in India in 1952-53 and 1954-55 and the year 1955-56 was a year of recovery The periods of 1948-52 and of 1956-60 were marked by rising prices and increasing national income which are undoubtedly the signs of prosperity

The brief resume of the cyclical fluctuations of India and her main customers will now help us to analyse the relative importance of the cycles of home country and that of foreign countries over the movements of India s terms of trade

TABLE 8

CYCLICAL BEHAVIOUR OF FOREIGN TRADE INDICATORS OF INDIA 1948-60

Year	Net Barter Terms of Trade	Income Terms of Trade	Gains from Trade	Gross Barter Terms of Trade
1948-49*	—	—	—	—
1949-50*	+ 6	+ 7	+ 5	−16
1950-51	+ 1	+14	+ 3	−12
x‖ 1951-52	+16	+ 6	+21	+55
** 1952-53*	−30	−26	−36	−50
1953-54*	0	0	0	− 7
** 1954-55*	+10	+15	+10	+11
1955-56	− 7	+ 3	− 7	− 4
1956-57	0	− 5	0	+24
x 1957-58	− 7	0	− 7	− 3
1958-59*	+ 1	− 8	+ 1	− 9
1959-60	+ 8	+20	+ 6	+ 9

‖ Peaks of business cycles of foreign countries (crossed) and of India (dash) troughs of business cycles of foreign countries (starred) and of India (double starred) with rise (plus) and fall (minus) of foreign trade indicators during phase of cycle]

SOURCE *Monthly Abstract of Statistics*

Table 8 clearly illustrates that the American recessions of 1949 and 1953 54 did not adversely affect India s net barter terms of trade income terms of trade and the gains from trade But India s gross barter terms of trade showed some decline in 1949 50 whereas in 1953 54 it improved by 43 percentage points over the previous year America as well as Europe experienced a mild recession in 1958 but India s net barter terms of trade and the gains from trade registered slight increase over the previous year although gross barter terms of trade and income terms of trade experienced considerable decline The prosperity that accompanied the Korean boom gave rise to all round improvement in India s foreign trade indicators

The fluctuations in the business cycles of Great Britain are generally reflected in India s foreign trade indicators The recession of 1952 in Europe is acknowledged as the biggest post war recession and that recession greatly deteriorated India s net barter terms of trade income terms of trade gains from trade and gross barter terms of trade Our exports to Great Britain decreased from Rs 3 360 crores to Rs 2 241 crores between 1951 52 and 1952 53 and this was undoubtedly the primary reason for the deterioration in our foreign trade indicators The inventory boom of Europe in 1953 57 gave rise to improvements in our foreign trade indicators in 1953 54 and 1954 55 but the stagnation of the British economy in 1955 58 caused by anti inflationary policies of the British Government led to their overall deterioration during the years of 1955-58 although the income terms of trade and gross barter terms of trade showed some improvements in 1955 56 and 1956 57 respectively because of some increase in the quantum of export in the first case and of imports in the second case Great Britain relaxed her anti inflationary measures by the end of 1958 and correspondingly our foreign trade indicators except gross barter terms of trade showed some improvements It may be said that in general changes in India s trade indicators primarily depend on the fluctuations of her trade with Great Britain

We have already observed that India experienced rising trends of prices and national income during the periods of 1948 52 and 1955 60 Again she witnessed recessions in the years of 1952 53 and 1954 55 India s foreign trade indicators with the exclusion of gross barter terms of trade in 1949 50 showed a continual trend of improvement during the years of prosperity in 1948 52 On the other hand the era of prosperity of 1955 60 in India did not register any noteworthy improvement in foreign trade indicators with the exception of 1959 60 In fact foreign trade indicators showed some deteriorations in that period Again the recession of 1952 53 was accompanied by a deterioration in the foreign trade indicators whereas that of 1954 55 experienced improvements Therefore it seems that the cyclic behaviours of foreign countries especially Great Britain rather than that of India have greater effect on the movements of India s foreign trade indicators

V

The paper may be summarised under seven headings

1 Net barter terms of trade has correctly indicated the gains from foreign trade of India during the period of 1948-60

2 The impact of changes in the net barter terms of trade on India's national income has been quite negligible on account of the fact that the proportion of real export to real national income is rather small.

3 Increases in the net barter terms of trade and quantum of export have improved the trade balance of India whereas the enhancement of the volume of imports and gross barter terms of trade have deteriorated it

4 Since the introduction of planned economic development in India, net barter terms of trade and income terms of trade improved over the previous year in four and three cases respectively out of eight possible cases

5 India's quantum of exports and of imports showed some trends of increase during the plan periods

6 Devaluation did not lead to a deterioration in India's foreign trade indicators except the gross barter terms of trade

7 The cyclical behaviour of foreign countries, especially Great Britain influenced the changes in India's foreign trade indicators

VI

APPENDIX

(i) GLOSSARY

Net Barter Terms of Trade	A ratio of unit value of exports to unit value of imports
Income Terms of Trade	Net barter terms of trade multiplied by quantity of exports
Gains from Trade	Income terms of trade minus quantity of exports
Gross Barter Terms of Trade	A ratio of quantity of exports to quantity of imports

(ii) SOURCES

Unit values of export and import, and the volume of exports and imports are taken from various *Monthly Abstracts of Statistics* Cabinet Secretariat Govt of India

All the data relating to India are taken from the same source

For agricultural production, industrial production and foodgrains production base has been changed to 1952-53=100

Index for production, agricultural and industrial, are for calendar years so that production for 1958-59 really stands for the production of 1958

(*In*) REAL NATIONAL INCOME OF INDIA 1948 59*

(In 000 crores of rupees)

1948-49	88 7	1953-54	100 9
1949 50	88.2	1954 55	96 1
1950-51	87 9	1955 56	108 4
1951 52	79 70	1956-57	109 8
1952-53	96 2	1957 58	104.5
		1958 59	112 6

* Real National Income of Period $1 = \frac{\text{National Income of Period}}{\text{Wholesale Prices of Period}} \times 100$

INDIA S RATIOS OF REAL EXPORTS TO REAL NATIONAL INCOME 1948 59**

(In percentage and figures are rounded)

1948-49	5	1953 54	5
1949-50	6	1954 55	6
1950-51	6	1955-56	5
1951 52	8	1956-57	5
1952-53	5	1957 58	6
		1958-59	5

** Value of exports is deflated by export value deflator to determine the value of exports in real terms

INDIA S GROSS BARTER TERMS OF TRADE 1948-60 (BASE 1952-53=100)

1948-49	123	1953-54	93
1949 50	107	1954 55	104
1950-51	95	1955-56	100
1951 52	150	1956-57	124
1952-53	100	1957 58	121
		1958-59	112
		1959 60	121

Concentration of Tea Exports from India

THE DEGREE of concentration of exports and imports is measured by the Gini index of concentration As Hirschman[1] points out it depends upon the number of countries with which a country trades and the nature of the distribution of this trade between these countries If there are n different countries with which the country trades the annual value of trade with any country i is x_i and X the value of the total trade of the country, the co efficient of concentration will be given by $\sqrt{\sum_{1}^{n}\left(\frac{x_i}{X}\right)^2}$.

For convenience the index is multiplied by 100 (i e the relative share of each country in the trade of the country under examination is shown as a percentage of the country's total trade)

Obviously the highest possible value of the index is 100 when a country's trade is monopolised by another country The theoretical limit at the other extreme is a value of zero for the index when an infinite number of countries each possesses an infinitesimally small share in the trade of the country The lower limit of the index changes with the number of countries with which a country trades For each value of this number, the smallest value of the index is given by an equal distribution of the country's trade among these different countries It is clear that if the number of countries remains constant the index increases whenever a particular percentage *P* increases at the expense of some percentage smaller than *P* i e when a relatively small percentage becomes still smaller and a relatively large percentage becomes still larger

It should be pointed out that the index does not measure the monopoly strength of the largest trading partner of the country which varies directly with the concentration of the country's trade with that country and inversely with the concentration of the remaining part of the country's trade, whereas the index of concentration varies directly with both The index of concentration on the other hand measures the strength of oligopoly or oligopsony in a country's external market monopoly being considered as a limiting case The index will always be numerically higher than the percentage held by the largest trading country

This is the index of geographical concentration This may measure the concentration of a country's exports or imports A similar co-efficient can be used to measure commodity concentration of exports and imports

[1] Hirschman A O, *National Power and Structure of Foreign Trade*, Chap VI

The degree of commodity concentration depends on the number of commodities traded in and the share of each commodity in the total trade

Any attempt to measure the indices of concentration must encounter certain difficulties These are

(*a*) Certain groups are of catch all (n e s) type and these may be large Items entered under other countries' or "other commodities may indeed inflate the degree of concentration if proper attention is not paid to them

(*b*) Again recorded statistics of foreign trade relate only to trade in goods and do not include the trade in services But this does not seem to be a severe handicap as the trade in services is usually small compared with the trade in goods

This paper is an attempt to measure the geographical concentration of India s export trade in tea [2] The choice of the commodity has been guided by the following considerations

(*a*) No other major item in our export trade is as much homogeneous

(*b*) Tea is one of the three main traditional items of our export and in the present context probably the most important The world demand for jute textiles which is noted for its notorious instability is falling In the market for cotton textiles, which is already limited by the Buxton Agreement there is stiff competition from China and Japan

With regard to the difficulty with the blanket item other countries' and the danger of the index of concentration being unduly inflated, we have followed Hirschman s[3] procedure While measuring the indices of concentration of foreign trade of some small countries Hirschman gets over this difficulty by arbitrarily assuming this item to be composed of equal parts of 0 5 each and remainder if any, e g if this item is 1 7 per cent he regards this as consisting of three equal components of 0 5 each and another of 0 2 Speaking strictly even this overstates the degree of concentration for even among the percentages for individual countries there are figures smaller than 0 5 per cent But then the deviations because of these inaccuracies are too small to be significant

In the table below the indices of concentration of India s exports of tea are given

[2] For the sake of homogeneity we have confined to black tea only Green tea, however accounts for only a small fraction of total exports of tea from India

[3] Hirschman *op cit*

TABLE I

Year	Index
1937-38	87 6
1938-39	87 9
1946-47	70.5
1947-48	60 0
1948-49	65 6
1949-50	60 0
1950-51	62.3
1951-52	66.2
1952-53	69.5
1953-54	72.6
1954-55	70.2
1955-56	68 9
1956-57	69 6
1957 58	65 6
1958-59	65.5
1959-60	62 1

SOURCE *Accounts Relating to Foreign Trade* and *Monthly Statistics of Foreign Trade* published by the Director of Commercial Intelligence and Statistics

A study of this table would show that there was a significant decline in the index in the post war period But nothing definite can be said about the trend of the movements of the index thereafter However, a close examination of the movements of the index gives some indication about its behaviour

A reduction in the index in the immediate post war period is explained by a marked expansion of the market for Indian tea There was practically no competition Indonesia was overrun by Japan and took a long time to rehabilitate herself China Japan and Formosa too, were deterred by the war The only competitor to reckon with was Ceylon This trend of the movement was reversed in 1950-51 when a movement in the opposite direction started The reasons for this are not difficult to find out. It was by this time that the full effects of devaluation of the Indian rupee vis-a vis the dollar were felt As other tea producing countries came into their stride after having completed post war reconstruction, India had to hark back to her original customers The outbreak of the Korean War and stock filing by India's customary trade partners further reinforced this process This came to an end towards the end of our First Five Year Plan and it can be said that from then on the achievements are the results of conscious efforts by our policy makers But even in 1959-60, the index was as high as 62 1, and both Hirschman and Michaely[4] define an index of 40 and above as high

While admittedly tea is in the nature of a primary export, and India is only a developing economy, nine years of planning have done very little to reduce the very high degree of concentration of our exports of tea.

[4] Michaely, Michael, "Concentration of Exports and Imports", *Economic Journal*, Dec., 1958

The reason for this very high degree of concentration has been our extreme dependence on U K which occupies a quasi monopsonistic position in the market for our exports of tea In fact, the movements in the index of concentration of our exports of tea have almost been co-extensive with changes in the percentage shares of our exports of tea lifted by U K The extent of our dependence on U K can be seen when we look at the indices of concentration of our exports of tea to countries other than U K

The indices in Table 2 have been constructed by treating the exports of tea to countries other than U K as the total exports of tea and working out the relative shares of all countries other than U K in that total

TABLE 2

Year	Index
1937-38	41.2
1938-39	42 9
1946-47	46 5
1947-48	32 2
1948-49	31.5
1949-50	32 8
1950 51	36 9
1951 52	33 6
1952-53	33 9
1953-54	36.5
1954 55	37 1
1955-56	34.4
1956-57	32.5
1957 58	31 6
1958 59	32 6
1959 60	30 4

SOURCE Same as in Table 1

A look at this table would at once show the difference The indices of concentration of exports to countries other than U K are almost half the indices of concentration of exports to all countries The former have never been high from 1947 48 onward Whereas the index of concentration of exports to all countries varied between 220 per cent and 150 per cent of the lowest value of a high index of concentration the index of concentration of exports to countries other than U K has almost never been high in the post war period This figure is comparable with Hirschman's[1] figure for concentration of India's total exports in the immediate post war years viz 37 9 in 1937 and 37 8 in 1938 But even this figure is significantly higher than the one which would accompany an even distribution of exports between different markets Since there are about 23 countries which mainly lift the bulk of our exports of tea an index of about 20 6 would represent the case when the exports are distributed equally between different markets The trend of the movement of

[1] Hirschman *op cit*

countries an even distribution of her exports between the different markets would give an index of about 18 9 and the actual index is more than double this figure In absolute terms however the extent of deviation is much less in the case of Ceylon.

Certain facts emerge from behind the array of figures which we have presented in this paper While the level of the index of concentration of exports of tea from India in 1959 60 is a sad commentary on the efforts so far made to extend the range of our trade connections the behaviour of the Ceylonese index shows that there are reasons to feel concerned While Ceylon s exports of tea over these years have increased steadily the index of concentration of Ceylonese exports of tea too has recorded an increase Thus has been made possible by increasing concentration upon the British, the Australian and the American markets which together account for about 60 per cent of her exports Since these markets have so long been the principal outlets for our exports of tea too (accounting some times for more than 80 per cent of our exports) it is time that we should look to the market orientation of our exports of tea and more fundamentally find out channels along which our enormous output of tea may be directed without jeopardy to the country s economy

GOUTAM KUMAR SARKAR

A Study of International Regulation of Tea Exports

I

THE MAIN purpose of an international agreement for the regulation of exports of a commodity is to stabilise the prices of that commodity in the world market However as the origin of all the International Export Control Agreements including the International Tea Agreement of 1933 could be traced to severe and prolonged depressions the aim of such a scheme can normally be described as that of, first, pushing prices of the commodity back to remunerative levels and then to keep it stabilised at that level Thus the former i e the idea of pushing up prices generally precedes that of stabilisation and the current talks regarding the revival of the International Tea Agreement has also been the outcome of the depressingly low prices that certain types of tea are fetching in the world market for the last few years

The export quota is thus the device used to influence prices and as such the quota percentages have to be changed from time to time Within each of the member countries special governmental machinery for licens ing and registration of exports have to be set up to allocate and ensure compliance of the quotas among different producers

Owing to the dismal failure of the previous private schemes of uncon trolled regulation not only in the case of tea (as in 1920 and 1930) but also all the other commodities it is evident that without proper control a restriction scheme cannot be successful The governments of the respec tive member countries must therefore actively collaborate by making regulations to prohibit export in excess of the quotas agreed upon and enforce them properly The standard on which regulation is based is determined by the performances in an agreed previous period In the case of the Tea Agreement of 1933 the maximum exports of each of the participating countries viz India Ceylon and the Netherlands Indies reached in any of the years 1929 1930 or 1931 were chosen as the required base [1]

Although price raising is the fundamental aim and export quotas the chief device an agreement of this sort cannot obviously succeed unless exporting countries also endeavour to take domestic measures with a view to preventing production from exceeding the combined domestic and export requirement Under the first agreement it was laid down that the exist

[1] *Annual Bulletin of Statistics 1934* International Tea Committee London

ing tea areas should not be extended during the period of the scheme except in special cases and never more than ½ per cent of the existing total planted tea area of each country [2] These new acreages were intend ed to meet the needs of producers who at the time the ban was imposed had not an economic unit Replanting was limited to replanting on the same area which had been uprooted

Apart from planting restriction efforts should also be made as under earlier agreements for the effective prohibition of the export from the regulating to the non regulating countries of planting material viz seed root stumps cuttings buds or any living portion of a tea plant which may be used to propagate it with a view to discouraging the development of outside production The administration of the scheme, as in the past, will obviously be the responsibility of the Internal Tea Committee—the only representative international organisation of the tea growers and the administrative expenses would presumably be divided among member countries in proportion to their votes

The restriction regulation however may induce estate owners to transfer export licenses in whole or in part from one of their own estates to another or even to estates of another owner There is a possibility that a grower might use his license as an object of barter and sell it instead of working his own garden These transfers although sometimes helpful to producers of inferior grades of tea having little export demand are often likely to affect adversely the public interests in the respective districts These possibilities can be minimised by various measures Firstly such transfers may be made subject to the approval of the authorities and secondly as in Indonesia a system of joint licenses may be introduced by which owners receive a single license for all the estates belonging to them [3]

II

There is a number of economic and technical factors which facilitate the successful operation of an export regulation scheme for tea and which actually contributed to the success of the past schemes of tea control Before discussing them it will be worthwhile to briefly review the experiences of the tea industry under the export regulation scheme of 1933 and to judge how far the claim of that International Tea Agreement as being the most influential of all the various commodity control schemes of the thirties could be upheld

The immediate background of the agreement was the great depression of the thirties which rudely disturbed the stability of the tea industry Between March 1929 and June 1932 tea prices fell by about 59 per cent while the average fall in prices for all commodity was only 39 per cent [4]

[2] *Ibid*
[3] Boeke J H *The Evolution of the Netherlands Indies Economy*, 1946 p 58
[4] Layton W T and Crowther G *An Introduction to the Study of Prices* 1938 p 197

Moreover the decline in tea prices was more than in respect of the major plantation products excepting rubber This will be evident from the following table indicating the percentage decline in the prices of the five major plantation crops between March 1929 and June 1932 [5] The date June 1932 has been chosen as the end of this period as it was then that *the indices of wholesale prices and the general business activity reached* their lowest points

TABLE I

Commodity	*Percentage fall in prices*
Coffee	46
Cocoa	21
Raw Sugar	23
Refined Sugar	18
Rubber	84
Tea	59
All commodities	39

Stocks of tea began to accumulate in U K and rose to 270 millions lb. in 1931 and to 309 millions lb in 1932—about eight months supply [6] During 1932 the average price of common Assam tea on the London auctions was a little over 6 d per lb [7] Similarly prices which had averaged about 90 cents per kilogram in Amsterdam until the middle of 1926 had by the end of 1932 dropped to about 22 cents [8] In Batavia the average price paid at the end of 1932 was only 13 cents per half kilogram the position of tea cultivation in the Netherlands Indies had become so precarious that despite a slashing down of expenses which had reduced the cost price to one half of what it was in 1930 nine out of every ten estates worked at a loss [9] Some of the factories were forced to close down Native producers who had obtained upto ten cents per half kilogram of wet leaf in 1926 had in 1932 to be content with 1 5 cents—a price which even for them no longer made picking worthwhile "[10]

But immediately after the signing of the agreement the price of tea began to recover In 1933 the annual average price of all tea realised at the London auctions was much above the very low level of the previous year In 1934 it was still higher—about three fourths of the average 1925-29 prices, and it remained around that level until the outbreak of war in 1939 (Table 4) During the same period the prices of comparable commodities remained much below their predepression levels Thus the price of coffee averaged only 43 5 per cent of its 1925 29 level, that of cocoa only 49 per cent and that of sugar only 36 per cent [11]

[5] *Ibid*
[6] Harler, C R., *The Culture and Marketing of Tea* 1956, p 248
[7] *Ibid*
[8] Boeke, J H, *op cit*, pp 56-57
[9] *Ibid* p 57
[10] *Ibid*, p 57
[11] F A O Commodity Bulletin Series, *Tea—Trends and Prospects*, 1960 p 27

In comparison with their depression rockbottom in June 1932 average tea prices rose by as much as 125 per cent in their recovery highs of March 1937 [12] Over the same period cocoa and sugar (refined) prices rose by 87 and 8 per cent respectively while coffee prices actually fell by 19 per cent [13] The average rise in prices for all commodities during this period was 48 per cent [14] Among plantation products only rubber showed a greater increase (764 per cent) than tea, but this was very largely due to the very low level to which the price of rubber had fallen in the depression and also due to the much more rigorous scheme of control adopted for the commodity.

The greater rise in tea prices as compared with other plantation products is indicated in the table below [15]

TABLE 2

INDICES OF PRICES OF COFFEE, COCOA, SUGAR AND TEA 1925-29=100

	Year	Coffee	Cocoa	Sugar	Tea	
		(A)	(B)	(C)	(D)	(E)
Average	1925 29	100	100	100	100	100
	1930	60	67	58	85	66
	1931	39	43	44	68	64
	1932	48	47	37	33	38
	1933	42	37	33	66	57
	1934	51	43	35	74	77
	1935	40	44	34	75	73
	1936	43	57	34	73	75
	1937	50	70	44	65	67
	1938	35	43	39	61	61
Average	1930-32	40	49	43	69	63
Average	1933-38	43.5	49	36	75	75

Col (A)—Santos No 4 N Y (U.S cents per lb)
Col (B)—Accra N Y (U.S cents per lb)
Col (C)—Raw Sugar, c i f U K from 1925 to 1930 and world price from 1931 to 1938 (U S cents per lb)
Col (D)—London auction (d per lb)
Col. (E)—Same price converted into U.S currency

It is, however, difficult to determine precisely the proportion of the rise in the prices that should be ascribed to the overall recovery in wholesale prices which started in 1933-34 and the proportion that must be ascribed to the effects of the agreement Nevertheless there is little doubt that the adoption of export quotas during the years 1933-37 at an average of 85 per cent of standard exports and the knowledge that the quotas could be pared down whenever prices fell heavily along with the low price elasticity of demand for the commodity were largely instrumental in

[12] Layton, W T and Crowther G *op cit*, p 207
[13] *Ibid* p 207
[14] *Ibid* p 207
[15] F A O., Commodity Reports, *Tea*, 1953 p 21

bringing about the rise in tea prices—which significantly exceeded the general recovery of prices over the same period It was perhaps only the non participation of the Chinese and the Japanese Governments in the scheme that prevented a greater upward movement in tea prices that took place during the period of the first agreement There is thus no doubt that the tea industry enjoyed under regulation greater stability and prosperity than existed prior to the agreement and admittedly greater than it could have enjoyed in the absence of control This will also be somewhat evident from the range in annual average prices of all teas sold at the London auctions during the period as derived from Table 3

Six year periods	Range (Pence per lb)	Range (per cent)
1922 27	3 9 (15 1 to 19 0)	29 2
1928-33	5 0 (11 7 to 16 7)	42 7
1934-39	6 (13 3 to 13 9)	4 5

Reduction in output effected by producers was mainly through finer plucking The quotas were highly effective and actual exports from member countries never deviated much from the prescribed quotas Thus actual exports exceeded the average annual quotas for the five years by only about 8 per cent [16] Regulating countries were however perturbed by the prospect of losing overseas markets to the non regulating countries but the lack of suitable land labour or capital resources as well as the virtual prohibition of seed exports to non member countries made it somewhat difficult for them to rapidly increase production The East African countries for example had experienced an acute shortage of tea seed when they had later contracted out of the scheme

As earlier stated the tea control scheme was not designed to secure an unduly high level of prices and the International Tea Committee as such was evidently bent upon a liberal policy The curtailment of exports was not at all severe During the years 1933 to 1938 the three participating countries restricted their average exports by only about 12 per cent as compared with the last four pre agreement years—from 355 6 million lb to 314 million lb annually [17] Over the six years 1933 to 1938 average annual world imports were 866 9 million lb as compared to 893 4 million lb over 1927 to 1932 [18]

The rise in prices in absolute terms during the years of the first agreement was consequently moderate too as compared with the pre depression levels and did not evoke consumer resistance of any sort although representatives of importing countries were absent in the controlling body

[16] *Ibid* p 19 [17] *Ibid* p 19 [18] *Ibid* p 19

TABLE 3[19]

ANNUAL AVERAGE PRICES AND PRICE INDICES ALL TEA LONDON 1922-39

Year	*Annual Average Prices London all tea (Pence per lb)*	*Price Index London all tea* 1930=100
1922	15 1	99
1923	18 7	123
1924	19 8	130
1925	18 0	117
1926	19 3	127
1927	19 0	125
1928	16 7	110
1929	16 3	107
1930	*15 2*	*100*
1931	12 2	50
1932	0 4	61
1933	11 7	77
1934	13 3	74
1935	12 9	80
1936	13 1	86
1937	15 2	100
1938	14 4	95
1939	13 9	91

A comparison of the International Tea Agreement with the tin and rubber control schemes also instituted during the early thirties is worth undertaking at this point All the three commodities showed their lowest average annual prices for the depression in 1932 (Table 4) Tin control was instituted first (March 1931) followed by the tea and rubber control (June 1936) and tin prices surpassed their 1939 level as early as 1934 Export quotas applied for each commodity after the adoption of the control schemes are not technically comparable due to the varying nature of bases used Nevertheless the fact that during the years of the first Regulation Scheme the quota for tea varied between 82½ to 87½ per cent of standard exports while quotas of 45 to 60 per cent and of 35 to 50 per cent were common for rubber and tin respectively is sufficient to indicate the comparative rigorousness or monopolistic character of the three control schemes Tin and rubber prices also rose much more sharply than tea over 1932 and 1939—by 156 and 764 per cent respectively as compared to 125 per cent for tea The following table explains the nature of price movements of the three commodities under consideration during the period [20]

[19] Wickizer V D *Tea under International Regulation* 1944 p 183
[20] *Ibid* p 111

TABLE 4

INDICES OF TEA, RUBBER AND TIN PRICES, 1924-39*
1929=100

Year	*Tea*	*Rubber*	*Tin*
1924	122	129	111
1925	111	858	128
1926	119	238	145
1927	117	184	142
1928	103	109	112
1929	100	100	100
1930	94	50	70
1931	75	30	54
1932	58	17	49
1933	72	29	87
1934	82	63	115
1935	79	60	112
1936	80	80	103
1937	93	94	120
1938	88	72	94
1939	66	66	111

* Based on prices of all teas at London auctions and on New York prices of ribbed smoked sheet plantation rubber and Straits tin

It is, therefore difficult to disagree with Wickizer's contention that "tea control at least in comparison with the rubber and tin control appears to have been less restrictive and certainly less exploitive,"[21] as also the view of F A O experts In principle the Tea Agreement can be criticised for not including any representatives of consuming countries, or rather, since the producing countries are themselves substantial consumers of tea, of importing countries It was potentially at least a producers' monopoly Its record shows, however, that its monopoly powers were not abused [22]

III

Although after the launching of the agreement in 1933 the stock position of world tea improved appreciably and the pre depression price level recovered potential production i e productive capacity of India Ceylon and Netherland Indies alone still exceeded world consumption requirements of the time by some 20 per cent or more [23] Accordingly it was unanimously decided to continue the export regulation A second agreement from April 1938 was thus entered into for a further period of five years

However during the operation of the second agreement the Second World War broke out and with it the story of tea control and regulation

[21] *Ibid*, p 113
[22] F A O Commodity Bulletin Series *Tea—Trends and Prospects* 1960
[23] Rubinfield James "Netherlands Indies Benefits from Five-Year Tea Regulation Scheme", *Tea and Coffee Trade Journal*, May, 1938, p 37

entered a new phase The export quota of 90 per cent originally fixed in 1939 was successively raised to counteract the large and continuous rise in prices and to ensure the steady flow of supplies After the Japanese occupation of the Netherlands Indies in early 1942 the restriction provisions of the agreement evidently lost all practical significance Thus after 1942 43 when tea supplies dwindled heavily, the International Tea Committee was admittedly operating just to keep in tact the administrative machinery of international regulation and had little, if any, actual effect in controlling exports In 1942 43 the quota was raised to as much as 125 per cent In 1943 in order to keep the scheme in existence and provide for future emergencies the second agreement was extended for the duration of the war and for some further period in the case of India Ceylon and the East African countries The East African Government did not renew their control legislation in 1947 and ceased therefore to be members of the Regulation Schemes

An interim Producers Agreement was entered into by industry representatives from India Pakistan, Ceylon and Indonesia upon the expiration of the extended International Tea Agreement on 31st March 1948 and this was to have a maximum life of two years The main features of previous agreements were continued but the restrictions on new planting were liberalised and the quota raised slightly Extensions on land not planted were limited to 2 per cent of permissible acreage annually and replacements were allowed up to 5 per cent Such replacements were to be accompanied by simultaneous uprooting of old tea [24]

By the close of the 1940s tea supplies were becoming more abundant while the rate of consumption in overseas markets was below the annual average for pre war years This pointed to the need for maintaining the machinery of regulation and the International Tea Committee came to the unanimous conclusion that the scheme should be continued after 31st March 1950 Accordingly the producers of (*a*) India (*b*) Pakistan (*c*) Ceylon and (*d*) Indonesia entered into a new agreement starting on the 1st April 1950 and ending on the 31st March 1955

The figure of regulation (i e the permissible exportable quantity) fixed for the first year of the new period of regulation was for each of the producing countries to be 130 per cent of the ascertained standard For the next four years the export quotas were kept fixed at 135 per cent The permissible acreages on the 31st March 1950 were as follows [25] viz

India	806 728 acres
Pakistan	79 768 ,
Ceylon	588 227
Indonesia	539 772 ,

[24] I T C Report for the period from 1st April 1941 to 31st March 1949
[25] I T C Report for the period from 1st April 1953 to 31st March 1954 p 7

Extensions of tea permitted in each producing country were not be exceed 5 per cent of the permissible acreage on the 31st March 1950 [26]

The last agreement continued upto 31st March 1955 and was not renewed

Below are given the export quota figures under the International Tea Exports Regulation Scheme

TABLE 5

EXPORT QUOTAS UNDER THE INTERNATIONAL TEA EXPORTS REGULATION SCHEME—1933-55*

(Percentage of Standard Exports)

Regulation year (April 1 March 31)	*Quota*	*Revision announced during year*
1933-34	85	None
1934-35	87½	None
1935-36	82½	None
1936-37	82½	None
1937-38	87½	Originally fixed at 82½ raised in May
1938-39	92½	None
1939-40	95	Originally fixed at 90 raised in October
1940-41	92½	Originally fixed at 95 lowered to 90 in July raised in October
1941-42	110	Originally fixed at 90 raised to 95 in May to 100 in August, to 110 in October
1942-43 to 1947-48	125	None
1948-49	125	Fixed by Interim Producers Agreement 1948-50
1949-50	125	None
1950-51	130	Fixed by Agreement of 1950-55
1951-52 to 1954-55	135	None

* Revisions in quotas take effect from the beginning of the regulation year (April 1) regardless of when announced Percentages relate to the regulation year as a whole not to the portion subsequent to announced changes

IV

Let us now analyse the factors which helped the successful implementation of the past regulation schemes of tea and are also likely to facilitate any future agreement

In the first place as earlier hinted the demand for tea like most other primary commodities is relatively inelastic within customary price ranges in the major importing countries and hence a policy of regulation carried within certain limits is likely to increase not only the gross export earnings but also the net revenue of the industry as a whole Secondly the fact that tea is a plantation industry and one having the best type of organisation and financial control renders moderate marketing and

[26] *Ibid* p 17

production control somewhat easier than in the case of other commodities A large part of the production is still by European estates organised in strong associations and possessing statistical records Consequently the control scheme partly escapes the inaccuracies and "over estimates (for which it may or may not be possible to work out a coefficient of mendacity) which hampered the initial implementation of the production control schemes in the tobacco industry of the United States [27]

However, despite these natural advantages an international regulation scheme for tea cannot be successful unless it fulfils, as in the past, two basic requirements These are

(1) its scope must be sufficiently wide to include the greater part of the tea supplies entering world markets The first agreement covered India Ceylon and Java which together accounted for about 83 per cent of the total world exports of tea before the agreement (total world exports averaged 5 528 3 million lbs between 1927 and 1932 of which the three countries share was 4 607 8 million lbs),[28]

(2) the controlling authorities should always strive to avoid an extremely rigorous export and price policy For it is this most vital question which had largely determined the fate of earlier international commodity agreements especially the Stevenson scheme for rubber The restraint shown by the International Tea Committee in the past was however, due primarily to the fact that since a significantly large part of the world's exportable tea was both produced and consumed by Britishers it was not politically feasible to embark on a monopolistic exploitation of the tea market And as in future too like that in the past a part of the world's total exportable tea production is most likely to remain outside the scope of the regulation scheme and an exhorbitant price would stimulate production and exports by non member countries thereby throwing the whole scheme into jeopardy

V

While an international export regulation scheme for tea remains desirable for the world tea industry as a whole one cannot plausibly ignore its various limitations Some of them were actually experienced by the agreement of 1933 despite its success in comparison with other commodity control schemes of the 1930's In the first place the great disparity between the prices in the overseas and domestic markets that inevitably results from it tends to encourage evasion and smuggling despite rigid statutory control [29] Secondly there is the threat of larger exports from non regulating countries under the allurement of higher prices requiring

[27] Fay C R Plantation Economy" *The Economic Journal* December 1936 pp 642-43

[28] Based on data from I T C *Monthly Bulletin of Statistics* May 1941 Vol VI No 5 p 5

[29] I T C Reports for 1935 36 p 9 1938-39 p 9 1939 p 9

thereby a progressive tightening of control Indeed during the currency of the first and the second agreements in the thirties the volume of shipment from the non agreement countries continued to increase despite cautious and vigilant policy of the International Tea Committee and was a constant source of worry until the outbreak of the Second World War which temporarily eliminated the problem of over supply (Between 1933-34 and 1938-39 exports from non regulating countries increased by 33 3 per cent while exports from the regulating countries rose by 6 per cent only)[30] It is true that the non regulating countries faced certain difficulties in stepping up production and exports for lack of suitable seeds and that they produced mainly green teas which ordinarily are not directly competitive with the black variety Nonetheless there was a possibility that these main green tea producing countries mainly Japan and China would switch over to the production of black teas There was indeed some tendency towards the latter among those countries during the years of the agreement All these possibilities might recur as well under any future scheme of control

The benefits flowing from the agreement to different producers may not be evenly distributed This was a serious limitation of the tea regulation schemes during the thirties There is a large variety of tea and restriction regarding new planting applied to them regardless of the different conditions As a matter of fact it was only the poorer quality teas that had been in surplus but the producers of superior grades were also forced to curtail their output This affected them in many ways Although the prices of ordinary teas rose materially due to the restriction those of the finer quality teas did not as they were already fetching fairly high prices in the market This will be evident from the following table [31]

TABLE 6

INDICES OF TEA PRICES (AVERAGE FOR YEARS INDICATED)

Tea	1926-28	1930-32	1933-35	1936-38
Darjeeling	100	71	72	76
Assam	100	62	68	80
Cachar & Sylhet	100	48	73	83

Regulation on the other hand enhanced the production costs of all varieties of tea especially of the high grades Thus although the majority of the estates producing quality teas had larger per acre yields they did not get a differential treatment in regard to planting restrictions as no method other than blanket curtailment was considered practically feasible Moreover in the absence of quality differentiation and due to the characteristic behaviour of the prices of different grades of tea (the so called *Concertina*) it was but natural that quality teas would reap much less

[30] Based on data from annual reports of the ITC especially reports for 1935-36 pp 30-33 1937 38, pp 34 39 and 1939-40 pp 31-36

[31] Wickizer V D *Tea under International Regulation* April 1944 p 87

if any, benefits from the weight teas Accordingly under the policy of restriction all teas tended to move to a common level and quality production was discouraged This qualitative degradation has in fact been the concomitant of almost all similar commodity control schemes and especially for a non homogeneous commodity like tea where the problem of surplus is mainly confined to the inferior varieties may emerge under any similar future scheme of non selective control.

Theoretically, production restriction tends to improve the quality of the marketed crop if it involves finer plucking But there may be various methods of reducing production If the owner of an estate decides to let part of the estate go unplucked rather than adopt finer plucking throughout, there would admittedly be no qualitative improvement. Similarly firms working more than one garden might elect to confine restriction to certain ones, and thus there might or might not be improvement in the quality of the product Finally producers might choose to reduce the amount of manures and fertilisers generally employed and thereby reduce per acre productivity

"If finer plucking were the method universally adopted for reducing outputs, many benefits would accrue But really fine plucking requires an adequate labour force, for it presupposes that each plucking round is complete before the new flush is far forward, and may also involve a reduction in bonus to labour, which is not popular It is doubtful whether restriction can be so applied by gardens which produce mainly lower grade teas When restriction is effected by leaving some of the bushes unplucked, they become potentially heavier producers in the next season If finer plucking is unpracticable on estates producing lower grade teas, as the Imperial Economic Committee implies, quality improvement may not be as noticeable in practice as in theory it might be with output restriction"[32]

The benefits accruing to the labour under the agreement of this type are also highly dubious unless there is something in the agreement specifically providing for the improvement of working and living condition of estate workers Thus how far the past tea agreement had to do with improvement in their affairs is not clear Although some feel that one of the reasons why the governments of the agreeing countries were inclined to support the same was that it would enable producers through increased earning to meet government desire for improving the conditions of plantation labour There are others who aver that such progress as has been made in this respect has been absolutely unrelated to the agreement There are also economists who would well go to the other extreme and say that the agreement did positive harm to the labourers S R Sen, for instance, observed that inasmuch as it encouraged combination amongst planters the Tea Agreement led indirectly to a deterioration in the position of estate labourers until the govern

[32] *Ibid*, p 69

ment took a direct hand in labour problems [33] The F A O report on tea also aptly points out that the distribution of benefits in agreements of this sort as between the various sectors of the industry is exceedingly complicated and much depends on local and legislative frameworks" [34]

On the other hand following the adoption of export regulation wholesale price of tea starts increasingly depeodent upon the nature of the price policy of control authorities Sooner or later this will necessarily exert an upward pressure on retail prices and a downward pressure on consumption This might be desirable for the industry s short run interests of stability and profits in the light of the inelastic demand for the beverage in the important import markets But admittedly the chief and permanent hope of neutralising the tea world s surplus productive capacity lies in stepping up the rate of tea consumption throughout the world which implies a rightward shift of the industry demand curve Thus any control scheme should be accompanied by a vigorous drive for increasing tea consumption through all possible non price measures During the control scheme of the thirties the International Tea Committee had admitted that the real remedy required was an expansion of markets' [35] But it had failed in respect of its professed objective For although some progress was made in expanding consumption within the actual producing countries very little was done by the International Tea Market Expansion Board with regard to the more profitable export markets The International Tea Committee estimated that over 1932 and 1938 tea control in the three leading producer exporter nations approximately doubled and to some extent neutralised the reduction in absorption by western countries However, much of this tea was sold at very low prices without profit as a special form of dumping [36] Thus prices of tea for use within India were kept well below export prices and even tended slightly downward in 1939-40 when export prices tended upward In 1940 when overseas demand was strong, Calcutta export price', for example, "averaged more than three times the Calcutta price for home use [37] This excessive price differential, coupled with the extensive advertising, thus goes far to explain the doubling of tea consumption in 1932 38 within the three producing countries

The cost of such a regulation scheme to consumers is evident What is less clear is the burden thrown upon those potential tea producers who are denied rights of production under the scheme Where the production of the commodity constitutes basically the most profitable occupation the restriction affects severely large numbers of the local people, and when those debarred from setting up small plantations or small holdings are

[33] Proceedings of the 8th International Conference of Agricultural Economists, 1952, pp 487 88
[34] F A O, Commodity Reports Tea No 1, August 1953 p 22
[35] I T C Review of the International Tea Regulation Scheme 1933-43
[36] Wickizer V D, Tea Under International Regulation 1944 p 114
[37] Davis J S, "Experience Under Inter Governmental Commodity Agreements, 1902-45", The Journal of Political Economy, June, 1946, p 201.

forced to fall back on subsistence production and/or more or less casual wage earning this has highly undesirable effects on the economic well being as also on the political stability of the countries concerned. As a matter of fact one of the most serious limitations of an export quota scheme is that it introduces rigidities in the patterns of production (and trade) and thereby tend to prevent desirable long term changes in the sources of supply and the channels of trade of the particular commodity

VI

At present the question of reviving the old Tea Agreement seems uncer tain for the practical difficulties involved in launching any future agree ment are important and numerous In the first place much will depend on the policy to be followed by India—the largest exporter of tea which, however, has shown increasing interest in negotiating bilateral trade agreements for the increased sales of Indian tea in recent years Second ly, insurmountable difficulties might arise regarding future quota alloca tions—the rock on which the International Tea Agreement had foundered in 1955—owing to complex changes in the pattern of tea production and trade in the post war period The relative shares of India, Ceylon China, Indonesia and East Africa which have between them accounted for the large bulk of world exports have been changing in recent years And it is also doubtful whether any of these five would be willing to participate in an agreement unless the other four also participated, together with as many other tea exporting countries as possible But will it not be ex tremely difficult to bring together all the major tea producing countries under such an agreed international scheme of control? Especially Com munist China which enjoys a more or less sheltered market in Russia and has also recently entered the London auctions may not agree to cut down her quota radically It is more likely that she would not agree to parti cipate and accept export quotas which were not unfairly high compared with those of other exporters Similarly Ceylon is most likely to insist that her increasing population has no other important source of liveli hood and may consequently refuse to curtail her exports by any large measure especially as her domestic markets as also the scope of diversion operations are highly limited In sum, certain countries might well agree to participate but insist either on exhorbitant quota or on the exclusion of particular regional exports from the quota provisions typical examples of such regional exports being the exports of China to the U S S R and other Communist countries Moreover, relative shares must take into account regional preferences of importers springing either from typical demand for certain qualities (e g British preference for some Ceylonese teas) and geographical proximity and freight advantages And expansion of production and exports from countries which will remain outside the fold of the agreement will create a much more serious problem of regulation in future than in the past.

In short, any plan of international export control of tea must be founded on a radically different basis And the effective management of the world's tea economy requires a direct control of stocks which the International Tea Committee did not possess in the past and is also not likely to possess in the future.

The basic problem of such a control scheme is admittedly to avoid producing so much that the surplus available for export is too large But a large and sudden downward revision of export quotas, if that becomes necessary, in the absence of effective production restriction must lead to a glut of teas in the domestic markets of the producing countries causing thereby the internal prices of tea to fall too much below the level of prices obtained abroad and making them unprofitable even in such markets besides encouraging smuggling

Two alternatives might then have to be chosen Either production quotas may be allotted to he actual producers, or steps may be taken to buy up and dispose of the surplus production for destruction or for disposal at a loss But while the second alternative is much too painful from the viewpoint of consumer welfare the first, viz. production control for even a highly organised industry like tea involves important practical difficulties, if at all it is to be carried out with the least financial and technical damage A big company with a large number of estates, some on low and some on high altitudes, may be in a better position in this respect For it will just have to consider whether it is not desirable to stop working one estate and "put it down to care and maintenance" allowing the other estates capacity working But a small company has obviously much less scope for such action For while it will also have to restrict output to the prescribed quota by discarding the poorer fields the cutting out of particular field may bring it down to a level of production which is anything but technically optimum This problem of allocative efficiency in respect of production quotas is indeed a vexed one and all the resources of a country's Tea Research Organisation may thus have to be taxed in order to divert its endeavours from the normal task of assisting expansion to that of working out the kind of reduction which is least harmful technically for estates in different situations[*] What is particularly disturbing is the fact that in case of some other primary commodities producers can readily shift to other lines of production following the application of a largely reduced production (or export) quota For tea, however, this is not possible inasmuch as lands used for tea culture can hardly be utilised economically for other crops *

The principal producers and consumers of tea are still both British (or English speaking) but in view of the increasing diversification of world

[*] This point is also made out in C R Fay's "Plantation Economy", *The Economic Journal*, Dec., 1936 p 642

* Thus the past Tea Agreement was primarily concerned with the regulation of exports and in India it was accompanied by a necessarily feeble gentleman's agreement under which producers agreed *not to manufacture for sale* in the domestic market more than a certain percentage of the estate's basic crop.

tea production and markets in the post-war period any future scheme of international regulation of tea cannot plausibly ignore the question of consumer representation Moreover, the post-war ethics of inter govern mental commodity consultations also demand that producers and consumers (or exporting and importing government) should have equal weight in the working of an international commodity agreement. The desirability of providing for adequate safeguard to consumers in any future agreement is probably unquestionable, but the methods suggested are not essentially very sound For in any case bringing within the fold of an agreement a large number of tea consuming countries is apt to prove extremely difficult The I T C itself seems to have subscribed to the same view, even during the thirties, when it considered it impossible 'to find suitable representatives for all the different countries using tea", as also 'to make a choice from the distributing trade in the various regions as buyers are much too individualistic and competitive" [11] This admittedly complicates the problem of effective consumer representation more than in the past, for a future scheme of control may not appear to function within the framework of a "moderate' price policy, at least from the buyers' viewpoint owing to radical upward changes in the cost structure of the industry.

This brings us to the more general question as to the broad pattern of prices to be sought in any future scheme of control

Generally economists refer to prices which are 'reasonably remunerative" to producers and at the same time "fair' to the consumers But is not the concept of a 'reasonable price or rate of return somewhat ambiguous in the context of a highly diversified and changing cost structure of the industry? And even if a generally agreed 'fair price could be found by the producer groups will it appear to be equally fair to the consumers as well? The answer will certainly be in the negative if under the prevail ing cost conditions tea producers base their concept of fair prices on their traditional marketing margin—that which they were enjoying in the era of a seller s market

After all that can be said against an export regulation scheme for tea the fact remains that some such global and agreed scheme of export (and production) arrangement, especially, if possible, of common teas, remains basically desirable in view of the inherent instability of the commodity in overseas markets as also the tendency towards chronic surpluses And besides existence of chronic surpluses there is always the problem of over-supply caused by natural factors Surely it will not be possible to organise a new international agreement with its concomitant paraphernelia every time the commodity is confronted with a large surplus

The "most effective treatment of chronic surpluses is preventive and anticipatory', and what is needed most is "a continuously functioning

[11] I T C, *Review of the International Tea Regulation Scheme*, 1933 1943, p 174

organisation [1] Thus will constitute a forum of persistent international deliberation and co-operation and although differing technically from agreements as such will fulfil basically the same objective The FAO has rightly suggested to set up in this connection an international study group or similar body either by making use of the existing frame-work (and widening it to admit participation of importing countries) or on the lines of other inter governmental commodity bodies [1]

[1] and Black, J D "International Commodity Arrangements" *Quarterly* LVIII 1944 p 549
Bulletin Series, *Tea—Trends and Prospect* 1960, p 27

The Structure of Bilateral Payments Agreements India: A Case Study

I

BILATERAL Payments Agreements are by definition arrangements designed to relieve the payments problem between the contracting parties Such a payments problem is in general caused by some underlying factors—structural or financial by nature Some have conveniently given an operational definition of Bilateral Payments Agreements[1] such that it involves the settlement of reciprocal current settlements in a way that the minimum use of gold or transferable currency is required . But as will be seen later this definition is not comprehensive enough to explain the widespread application of the instrument in the tied export programme of the underdeveloped countries under long term credit contracts or the channelling of non commercial payments through the agreement account Bilateral Payments Agreements may suitably be taken to represent the settlement of any type of payments agreed upon by the contracting parties

A bilateral relation in payments can be attained by means of the operation of a non resident account that is not convertible in relation to third party transactions The account often consists of the export proceeds of the partner country This obviously amounts to exchange control in its extreme form

The diverse nature of the agreements makes difficult any classification based on their structural pattern The significant criteria of differentiation in the above context however seem to be with reference to the flexibility of the balancing arrangements and the degree to which they permit an advance towards free exchange conditions[2] From this point of view bilateral payments agreements may be divided into three "types Under settlements of the automatic transferability type balances are automatically settled in a multilateral fashion while the impact of bilateral negotiations is more expressly felt under exchange settlement type of agreements with periodic settlement of the accounts in free exchange (gold or convertible currencies) Finally the balancing of the accounts is complete under an offset type of settlement where the liquidation of the

[1] De Looper John H C **Current Usages of Trade and Payments Agreements**", *I M F Staff Paper* Vol IV August 1955

[2] Trued M N and Mikesell R F *Post-War Bilateral Payments Agreements* Princeton New Jersy 1955 pp 6-7

balance is effected by additional shipments of merchandise items

The payments agreements are refinements over the clearing accounts in their replacing of the inconveniences of the waiting chamber procedure by swing credit facilities Other aspects including the establishment of bilateral accounts in authorised banks of either/both of the partners have remained the same The unit of account for recording the transactions may be the currency of either of the partners or an acceptable third party currency The significance of one currency or other as the unit of account depends essentially upon the settlement provisions Thus the real value of the credit balance of one of the partners depends upon the price and quality of the goods traded under an offset type of settlement while under an exchange settlement it depends upon the valuation of the unit of account in terms of gold or convertible currencies From the point of convenience the currency of account should have a relatively wider area of acceptability abroad and a sufficient degree of conformity with the price and cost structure within [3] The unit if not linked to an acceptable major currency like dollar or sterling must be defined with reference to its official rate of exchange with a guarantee towards any revaluation of the balances

The account may be located in either or both of the countries with a centralised (in the central bank only) or decentralised (in the authorised commercial banks also) set up It may have a single uniform account ing system or a multiple one Multiple accounts have been employed with different objectives In some cases two accounts may be set up for singling out the recording of merchandise items from the invisibles In others it may be used to make possible the progressive liquidation of debts by earmarking a portion of the total sales proceeds for the purpose Finally a multiple set of accounts may conveniently be linked up to a multiple list of goods appended to a trade agreement with definite swing limits and total trade value for each of the accounts so as to attain a desired trade pattern

Payments agreements may be comprehensive enough to include any type of payments between the partners or payments on account of merchandise items only

Credit facilities of such agreements include short term swing credits with the objective of a smooth functioning of the trade programme and long term technical and commercial aids—often to be rapid through the same account Swing limits are rendered superfluous once the account is open so as to include both commercial and non commercial payments Finally, payments agreements are by nature complementary to the trade provi sions stipulated in the agreement and in some cases take the form of protocols to the original agreement

The implications of the payments agreements can be fully realised only with a proper attention to the set of events against which they are applied To be brief three important aspects of the payments agreements remain

[3] *Ibid* p 17 for an account of the status of rouble as a currency of unit

to be noted First, the financial aspect that highlights the fact that these provisions provide a general means of financing without the use of convertible currencies in a world of severe payments difficulties Next, from an economic aspect these agreements provide an economic use of the payments mechanism as explicit in the following considera tions

(i) possibility of stepping up trade through favourable payments facili ties and increased market contacts
(ii) superior bargaining strength and hence better terms of trade
(iii) stability of the market—both for the underdeveloped countries and the non capitalist countries
(iv) possibility of continuing trade with a debtor position while enjoying the benefits from long term credit and short term swing credit under the agreement

Finally, the legal aspect of these agreements is completely sanctioned so far the international agencies like the GATT or IMF are concerned Unlike a regional organisation like the EPU which ruled out any bilateral undertaking these organisations are mainly concerned with the stability of the exchange rate and the abolition of discriminatory com mercial policies The bilateral transactions are rather sanctified in terms of the numerous escape clauses of these documents[4]

The use and implication of the bilateral payments agreements are best revealed in the evolution of the practice from the thirties down to the 1960 s Bilateralism as an effective tool of commercial policy was first used as a counterweight applied to the mounting problem of a payments crisis faced by Germany in the absence of adequate liquid reserves Coupled with the former was a desire on the part of Germany to gain commercial advantages in the desperate competition for the depression shrunk markets Under the blocking of currencies the creditor nations also were compelled to arrange for some form of compensation or clearing agreements and thereby discriminate in favour of Germany The incon veniences of the waiting chamber procedure under the clearing agree ments prepared the pace in the post war period for an introduction of payments agreements with swing credit provisions and the inconvertibility of non resident balances With the establishment of the Sterling Trans ferable Account area in 1947 the principle of non resident inconvertibility was conveniently followed while bilateralism was never disallowed in practice With the decline in the international status of sterling the logical development was the establishment of a regional multilateral mechanism like the EPU for the OEEC countries and trade in the soft currency areas continued to be partially settled through bilateral channels The underlying motive of bilateralism in these days was apart from the economising of hard currency reserves the desire to maximise the gains

[4] Original provisions of the G.A T T and I.M.F

from trade in terms of the scarce materials on the one hand and long term credits with a "tied export programme on the other The gradual strengthening of the reserve portions of the European countries made it possible in December 1958 for a move towards convertibility of non resident currency holdings on the part of the majority of EPU members But for the Bilateral Account area currencies were normally transferable between one another[5] The significance of the new move was quite important for the discriminatory policies like payments agreements—so far their financial aspect was concerned However the economic significance of these measures remained unaffected and hence gained all the more importance as a result of this step

Bilateral Payments Agreements are recent additions to the toolbox of commercial policy of the Indian policymakers While trade agreements were in practice since the early years of independence payments agreements were not concluded before 1953 and widespread use of the practice began only since 1955 56[6] Bilateralism as an instrument for achieving the target of Indian commercial policy viz the maximisation of export earnings while reducing the non-essential imports to a minimum is quite consistent with the other instruments like quota licensing exchange control and export promotion in general

To take a typical payments agreement as concluded by India with other countries the control over exchange transactions between the two countries is usually established by means of a bilateral control over the bank accounts of the partner countries with the Reserve Bank of India and/or other banks The swing credit facilities where allowed are generally reciprocal

The principal features of India's payments agreements together with their significance can be analysed from summary table in the following pages

[5] IMF *Annual Report on Exchange Restrictions* 1959

[6] The Indo-Pak Agreements on Payments of 1948 and 1951 do not conform to the classification of Bilateral Payments Agreements accepted for the purpose of study in the present paper Thus neither an account (located in either of the countries) had been prescribed nor transferability had been assumed to be automatic These were rather variants of regional financial arrangements

TABLE 1

CLASSIFICATION OF INDIA'S BILATERAL PAYMENTS AGREEMENTS 1947-62

I	II	III			IV	V	VI	VII
		Terms of operation						
Name of the bilateral partner	*Type of agreement*	*Unit of account*	*Accounting procedure*	*Stated swing limits*	*Terms of settlement*	*Trade provisions*	*Remarks*	*Sources*
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1 Poland								
Jan, 1951	Automatic Transferability	Sterling	—	—	—	No quotas	—	*India's Trade Agreements*, 1949
April, 1956	Exchange Settlement	Rupee	Single decentralised rupee account in India to cover all payments	—	Balance convertible in sterling on demand or at termination	Some quotas	—	„ 1957
March, 1958	Partial Offset Settlement	Inconvertible Rupee	Multiple Accounts Centralised Trade Development Account and decentralised rupee accounts	—	Balance in the Central Account to be offset by additional shipments and/or by other payments provided those do not exceed 7½% of total exports	No quotas	Protocol to 1956 Agreement	*Indian Trade Journal*, 1958
Nov, 1959	Offset Settlement	„	Single decentralised rupee accounts to cover all payments	—	Balance to be offset by the shipment of goods	No quotas	—	„ 1962

TABLE I (*contd*)

I	II	III			IV	V	VI	VII
		Terms of operation						
Name of the bilateral partner	*Type of agreement*	*Unit of account*	*Accounting procedure*	*Stated swing limits*	*Terms of settlement*	*Trade provisions*	*Remarks*	*Sources*
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
2 Czecho-slovakia								
Nov, 1953	Exchange Settlement		Single decentralised rupee accounts to cover all payments	—	Balance convertible into sterling on demand	No quotas	—	,, 1955
				—	"		—	,, 1960
Oct, 1957				—			—	,, 1962
Nov, 1960	Offset Settlement		,,		Balance to be offset by shipment of goods			
3 USSR								
Dec, 1953	Exchange Settlement	Rupee	Single decentralised rupee accounts in India to cover all payments	—	Balance convertible into sterling		—	*India's Trade Agreements*, 1953
Jan, 1959	Offset Settlement	Inconvertible Rupee		—	Balance to be offset by the shipment of commodities		—	,, 1960
4 Rumania								
Mar, 1954	Exchange Settlement	Rupee	,,	—	Balance convertible on demand into rupees		—	,, 1955

TABLE 1 (*contd*)

I	II	III			IV	V	VI	VII
Name of the bilateral partner	*Type of agreement*	*Terms of operation*			*Terms of settlement*	*Trade provisions*	*Remarks*	*Sources*
		Unit of account	*Accounting procedure*	*Stated swing limits*				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
May 1959	Offset Settlement	Inconvertible Rupee	"	—	Balance to be offset by the shipment of commodities	"	—	" 1960
5 Hungary								
April 1949	Exchange Settlement	Rupee or Sterling	"	—	Balance settled in sterling	"	—	" 1953
Jan 1959	Offset Settlement	Inconvertible Rupee		—	Balance to be offset by additional shipments	"	—	" 1960
June 1960		"	"	—	"	"	—	" 1962
6 Bulgaria								
Feb, 1953	Exchange Settlement	Rupee	Single decentralised trade accounts to cover all payments	—	Balance convertible into sterling	No quotas	—	*India's Trade Agreements*, 1957
Jan, 1956	"	Rupee	"	—	"	"	—	" 1957
Jan, 1959	Offset Settlement	Inconvertible Rupee	"	—	Balance offset by additional shipments	"	—	" 1960
7 East Germany								
Oct, 1954	Exchange Settlement	Rupee or Sterling	"	—	Balance convertible into sterling	"	—	" 1955

TABLE 1 (*contd*)

I	II	III			IV	V	VI	VII
		Terms of operation						
Name of the bilateral partner	*Type of agreement*	*Unit of account*	*Accounting procedure*	*Stated swing limits*	*Terms of settlement*	*Trade provisions*	*Remarks*	*Sources*
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
July 1957	Partial Offset Settlement	Inconvertible Rupee	Special Trade Development Account to cover the payments of a selected number of items	—	Balance in the Special Trade Development Account to be offset by additional shipments	"	Protocol to 1956 Agreement	Department of State, U S A
Nov, 1958	Offset Settlement	"	Single decentralised rupee account to cover all payments	—	Balance to be offset by additional shipments	"	—	*Indian Trade Journal*, December, 1958
Dec, 1959	"			—			—	*India's Trade Agreements*, 1960
8 Yugoslavia								
July, 1953	Exchange Settlement	Rupee or Sterling	Nil	—	Balance convertible into sterling	"	—	1955
March 1956			Nil	—	"	"	—	1957
March, 1959	Offset Settlement	Inconvertible Rupee	Single decentralised rupee accounts	—	Balance to be offset by additional shipments	"	—	1960
March, 1960				—	"	"	—	" 1962
9 China								
Oct, 1954	Exchange Settlement	Rupee or Sterling	Nil	—	Balance settled in sterling	"	—	" 1955

TABLE I (*contd*)

I	II	III			IV	V	VI	VII
Name of the bilateral partner	*Type of agreement*	*Terms of operation*						
		Unit of account	*Accounting procedure*	*Stated swing limits*	*Terms of settlement*	*Trade provisions*	*Remarks*	*Sources*
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Oct 1957	Offset Settlement	Inconvertible Rupee	Single decentralised rupee account to cover mechanised items only	—	Balance to be offset by additional shipments	"	Agreement lapsed in December, 1959	" 1960
10 Egypt								
July, 1953	Exchange Settlement with offset arrangement for a part	Rupee for 40% of Egyptian export proceeds and pounds sterling for the remaining 60%	Centralised multiple accounts	Rs 100 m	Balance for the 40% rupee account settled under an offset arrangement with the stated swings The rest according to Egypt's foreign Exchange regulations	Some quotas	—	" 1957
April 1957	Partial Offset Settlement	Inconvertible Rupee	Multiple Centralised Accounts for the Special rupee account	—	Offset settlement for the proceeds of Egyptian raw cotton and cement deposited with the special rupee account	Some quotas	Protocol to the 1953 Agreement	*India's Trade Agreements*, 1960
Mar, 1960	Partial Offset Arrangement	"	Multiple Centralised Accounts	—	Offset settlement for the proceeds of Egyptian rice	"	"	" 1962

TABLE 1 (*contd*)

I	II	III			IV	V	VI	VII
Name of the bilateral partner	*Type of agreement*	*Terms of operation*						
		Unit of account	*Accounting procedure*	*Stated swing limits*	*Terms of settlement*	*Trade provisions*	*Remarks*	*Sources*
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
11 Afghanistan								
June 1957	Exchange Settlement	Rupee/E P and E P I procedures	Multiple Centralised Rupee Account/ L P and L P f procedures	—	n a	No quotas	—	*Indian Trade Journal*, 1960
Aug 1959	Partial Offset Settlement		Self balancing Multiple Centralised Accounts in India	—	n a	,,	—	*India's Trade Agreements* 1960
12 *Burma*								
Sept, 1958	Partial Offset Settlement	Inconvertible Rupee	Multiple Trade Development Accounts with the Indo Burma Trade Development Accounts A and B	Rs 30 lakhs on either side for Account B	Balance to be offset by additional shipments subject to the swing limit	Quota limits for individual items and for the total	—	,,
13 Pakistan								
Dec 1958	Partial Offset Settlement	,,	Single Centralised clearing account to cover payments on account of the articles mentioned in the Schedules	Rs 25 lakhs either way	Balance over Rs 1 000 to be settled by additional shipments of the scheduled commodities	Some quotas	—	
March 1960	,,	,,		Rs 50 lakhs either way			—	,,

The above table reveals the following facts

The most remarkable feature of these agreements is the widespread use of the rupee as the unit for accounting purposes While the earlier phase was marked by the use of sterling as an alternative use of the rupee was the general practice in the later years and since January 1959 the contracting parties had imposed non transferability upon rupee balances

The changes noted above also coincided (and in a sense reflected) with important changes in the nature of the agreements While the earlier years were marked by exchange settlement or even an automatic transferability clause of the payments provisions subsequent renewals extensions or fresh negotiations changed the settlement provisions Inconvertibility was imposed upon rupee balances (otherwise convertible into sterling) so as to make room for an offset settlement specially since January 1959

The changeover to a new technique as noted above can be explained by the following three factors

(i) There was the urgent necessity to step up India s exports during the development period

(ii) There was the need for reshaping India s trade structure both regarding composition and direction The well known limitations faced by an underdeveloped country with traditional exports directed to the traditional partners in the metropolitan areas largely explained the above [1]

(iii) Convertible rupee balances had a changed significance so far Transferable Account Sterling had already acquired an international status and the eventual convertibility in December 1958 removed any sort of distinction between the degree of convertibility among different currencies On the other hand India s sterling reserve with the United Kingdom was already quite exhausted and the policy makers felt it imperative to make the minimum use of the rupee sterling dollar link Any type of economic transactions involving barter or other type of agreements were welcomed

The only relaxations allowed in the otherwise rigid balancing provision can be noted in the following cases First there was the comprehensiveness of the agreement accounts and the resulting flexibility in the balancing of the trade items under the open account With the financing of long term credits balancing of trade could be projected over a longer time span—provided the agreements did not terminate

Next the accounts were kept open both as regards contents and transferabilities in the case of Czechoslovakia While reducing to the minimum the inconveniences on account of a creditor status the provision of such transfers to other rupee accounts held by third parties also increased the hope for a future use of rupee with an international status or at least with a regional status

[1] Patel S J *Export Prospects and Economic Growth* E J Sept 1959

Third, some amount of flexibility had been incorporated in the agreements with non Soviet bloc partners, viz. Afghanistan, Egypt, Burma, Pakistan and Yugoslavia The provision for a partial settlement of the bilateral accounts with these countries with free exchange was nothing but a concession allowed for accommodating within the framework of the agreements the predominance of free markets rather than State Trading Agencies in these economies Further, the agreements allowed for the different changes in the foreign exchange regulations of the contracting parties Thus the abrupt and rather drastic changes in the foreign exchange regulations of Egypt were reflected in the changeover from Egyptian pound accounts to rupee accounts in March 1957, from rupee accounts to E P. accounts in March 1958, and finally, back to rupee accounts again in August 1959 Similarly the lack of a properly instituted exchange control system between the two countries was reflected in the provisions of the 1948 (July) Indo Pak Payments Agreement.

Finally, the latitude allowed to the ultimate authority of 'mutual decisions" in balancing provisions reduced to a remarkable degree the rigidity of the system

One should also note the increasing trend towards the utilisation of multiple accounting with a multiple number of schedules appended to the agreements The purpose was largely explained by the nature of the agreements Thus the balancing provision of one or other of the accounts under partial' offset settlements made room for the promotion of India s non traditional exports (Burma) or the vital export items (Egypt)—while complete offset settlements—often under barter agreements—arranged for the promotion of exports in general in exchange of capital goods

The agreements were also marked by the absence of two important common features of such a structure They usually contained no categorical statement regarding the rate of valuation of the currency of account or of the outstanding balances Moreover in the majority of cases swing provisions were absent While the close relation between the rupee and sterling explains the first the second phenomenon is largely explained by the comprehensiveness of the accounts Thus in the case of agreements with Egypt (before March 1960), Pakistan and Burma, tho accounts covered only the merchandise items and hence definite swing limits were prescribed

As regards the particular currency area to which the agreement partners belong, India had concluded complete or partial bilateral offset agreements with all the countries of the 'Bilateral Account Area'[1] and also with a number of other countries in the Soviet bloc and outside So far the Soviet bloc w is concerned the rupee as the unit of account had an additional significance since the currencies of these countries were not transferable even within the bloc and any balance was most unstable in value so

[1] Afghanistan, East Germany, Poland, U S S R and U A R (Egyptian region) See I M F, *op cit*, p 156

far such real value was generally measured in terms of changing internal costs and prices under offset type of settlements The rest of the countries were largely traditional trade partners of India with important export items like cotton (Egypt) jute (Pakistan) or rice (Burma) In the case of Egypt, however the export account procedure necessitated a somewhat different technique [9]

Finally payments agreements provide an excellent framework for the financing of the long term tied credits India is getting from the Soviet bloc under a projected export programme Despite the limitations such a plan may face in the event of a favourable free market the highly desirable prospect of a stable source of earning for India must be appreciated [10]

[9] I M F *op cit* p 306

[10] This paper was read before the Research Students Seminar of the Department of Economics Calcutta University in September 1959 One may refer to the following article by the same author for a more complete account of the problem Rationale of India s Bilateral Payments Agreements" *Arthaniti* Vol V No 1 January 1962

Foreign Exchange Difficulties of a Developing Country[1]

I

THE ONLY accepted symptom of economic development in a country is its *increase in the rate of productivity of goods and services*. In other words, whenever the rate of production of national output is rising compared with a base period it may be said that the country is experiencing economic growth. This development can take place in a developed economy as also in an underdeveloped economy.

When economic expansion takes place in an underdeveloped economy, i.e. the economy in which more than 50 per cent of the population is employed in primary production,[2] the country in question faces certain repercussions in its foreign exchange position. We propose to study the factors which lead to the foreign exchange difficulties of a developing 'underdeveloped countries and shall suggest remedies for their solution.

II

It is necessary at first to examine the main characteristics of an underdeveloped country in order to ascertain the probable foreign exchange difficulties that it may have to encounter in a period of economic growth.

First of all a large percentage of population sometimes more than 70 per cent of the total population is engaged in primary producing industries. Secondly, the technological means for production are out moded and hence, per capita productivity is very low. Low per capita production, in turn, leads to low per capita income and consequently, to low saving.

Low savings on the other hand, lead to reduced supply of capital for the improvement in the level of technology in agriculture as well as for the development of industries.

Again, as large proportion of population that are employed in agriculture use low level of technology there must exist disguised unemployment which is reflected in low level of productivity.

Fourthly, underdeveloped countries will mainly export raw materials and agricultural products and will import manufactured commodities, both luxuries and necessities.

[1] This paper was read before the Research Seminar of the Department of Economics, Calcutta University and published in the *Indian Journal of Economics*, July 1960.
[2] Definition of Kingsley Davis.

Now, the primary objective of a developing underdeveloped country will be to enhance the productiveness of its factors of production This can be accomplished by a structural change in the input mix of the outputs For example, a 70 30 ratio of labour and capital in agriculture is to be changed to say, 35 65 for the sake of economic development This obviously means that the proportion of capital relative to that of labour is to be increased in the input mix in the initial stages of development Therefore when there is a shortage of capital in the underdeveloped countries it will have to be imported from the developed counterparts

It may be appropriate here to digress in order to refer to the popular misconception that economic expansion can take place in an underdeveloped economy by expanding labour intensive industries alone Probably, Nurkse and Viner are mainly responsible for this

Labour intensive industries may be defined as those industries where more labour is used in relation to other inputs for the production of a commodity As capital is scarce in underdeveloped countries labour intensive industries will mainly use labour and raw materials But the best use of raw materials can be made by improvement in the technology of production which in turn depends essentially on capital deepening[3] For instance more efficient manner of use of imported raw materials due to capital intensive innovations has enabled the United States and the United Kingdom to reduce the ratio of imported raw materials to total output[4] Thus the output per unit of raw materials will be lower in the labour intensive industries than in capital intensive industries assuming capital to be a perfect substitute for labour in the input mix As the supply of raw material is scarce in a given period the extensive use of raw materials in the labour intensive industries will reduce the availability of them for capital intensive industries in an underdeveloped country This shortage may push up the prices of raw materials and hence capital intensive firms or industries may have to work below capacity which goes against their productivity or even if their level of activity might remain unchanged it would have to be borne at a higher cost Therefore the productivity of manufactured articles which are mainly the product of capital intensive industries is likely to remain at a low level This will turn the terms of trade against labour intensive industries and in favour of capital intensive industries and thus the earning of labour is likely to be reduced in real terms Moreover increasing labour per unit of capital and raw material will lower the yield of labour On the other hand the deepening of capital in an industry increases per capita productivity of labour Therefore the growth of labour intensive industries alone may not raise the productivity of labour to such an extent as to provide sufficient savings for the expansion of even existing industries

[3] Rosen G *Industrial Change in India* p 111
[4] Cairncross and Faaland "Long term Trends in Europe's Trade *The Economic Journal* 1952 and Adler Schlesingar and Westerborg *The Pattern of United States Import Trade since 1923*

There is another point which the protagonists of labour intensive industries often fail to notice The real labour intensive industries are the tertiary industries which are essentially the product of high income level A primary producing or secondary industry can be capital intensive as well as labour intensive In other words labour and capital can be used as substitutes in most of the industries But when an industry is made labour intensive the per capita productivity of labour is lowered and hence, economic growth is retarded This is because, if we have labour-intensive methods of production the increased income shall mostly be distributed amongst the section of people who do not save at all and this will lead to a fall in the rate of saving * And if the rate of economic growth is dependent on the rate of saving a declining rate of saving will generate a declining rate of growth of national income Hence deepening of capital is essential for any developing economy Therefore it may not be wrong if we assume that there will be a gradual increase in the ratio of capital to labour in the input mix of a developing economy

We may now return to our main topic and examine the trends of foreign trade of a developing economy It is essential for a developing economy to raise the technological level as well as to change the input mix of the output in such a way that the rate of growth of saving should be higher than the rate of growth of consumption so that the proportion of capital to national income shall increase at the initial stage This will require a large volume of import of capital from developed countries at early stages of development Marginal propensity to import again is likely to be high in such an economy for two reasons (i) imports of capital goods will increase because of the structural change and (ii) increased incomes will raise the consumer expenditures on imports as domestic supply of commodities may be inadequate in the early stages of development

The marginal propensity to import of the developed countries on the other hand as regards the products of the primary producing countries is likely to be low for the following reasons

(i) technological innovations have lowered the ratio of imported raw materials to the manufactured articles
(ii) The demand for certain primary products such as food is inelastic

Thus it is very likely that a developing economy will face foreign exchange difficulties at the initial stages of development Again during the phase of economic growth the demand for exportable primary products will rise in the home market and so the total volume of exports will decline Greater the rate of economic growth that shall be attempted to achieve higher will be the rate of utilisation of those primary products at home resulting in still greater pressure in the balance of payments position

We shall further elaborate the problems relating to the exports and imports of an underdeveloped countries in the next section and thus, will

* Lewis, W Arthur *The Theory of Economic Growth*

make an attempt to generalise the causes of foreign exchange difficulties*

III

Shortage in economies means that quantity demanded of a commodity exceeds the quantity supplied at a given price If the mechanism of price system is given full scope to function there will always be equilibrium in the long run as whenever quantity demanded is greater than the quantity supplied the price will rise and a new equilibrium point will be reached On the other hand, there will always be a shortage of a commodity whenever the price is held below what the marginal buyers are willing to pay for it Foreign exchange shortage in accordance with the above analysis, may be described as a situation where foreign currencies demanded by the home country exceeds the foreign currencies supplied at a given exchange price of home currency for foreign currencies or currency In other words shortage of foreign exchange means that exchange value of home currency is higher than what it would have been if freely fluctuating exchange rate were the order of the day Therefore, it is a product of a distorted foreign exchange market mechanism whereby the exchange rates of home currency for other currencies are kept stable at a higher level

The extent of foreign exchange shortage of any particular country is not adequately reflected in her balance of payments deficit with the foreign countries as some of the debit items of it are covered by the foreign loans and grants military expenditures by the foreign countries in the home country, economic aids or as they (debit items) are artificially kept low by discriminatory restrictions imposed by the former over the products of the latter The foreign exchange difficulties may be described as solved only when there is an easy balance of payments within a particular period of time, between the home country and the rest of the world along with the preservation of a reasonably high level of trade, without necessitating restrictions on imports or exports

There is an obvious short coming in the above analysis It is assumed that the shortage is due to defect in pricing of home currency in terms of foreign currencies It may indeed be true that to a certain extent foreign exchange difficulties are due to the overvaluation of home currency in terms of the other currencies But this is not the complete picture

The persistent tendency of the balance of payments surplus of certain countries for example the United States between 1919 58 in spite of all kinds of efforts by the home country or a group of countries to improve her (their) balance of payments position may naturally induce one to believe that there may be some other factors besides the defect of the pricing which are responsible for the foreign exchange *difficulties of a country* So if we agree that the shortage in foreign currencies is the result of

* Analysis of section II is influenced by Henry Brutton's article entitled Growth Models and Under developed Economies *Journal of Political Economy* August 1955

some inherent disequilibrium between the economic structure of the home country and that of the rest of the world then some measures other than the alterations in the exchange value of the home currency will be required to eliminate the so called shortage

The foreign exchange difficulties of an underdeveloped country may be the outcome of various factors and they may be conveniently tabulated as follows

(a) A higher rate of productivity in the developed countries as compared with that of the underdeveloped country
(b) differences in the elasticities of demand for and the supply of products between the underdeveloped country and the rest of the developed world
(c) higher rate of saving in the developed countries relative to the underdeveloped country
(d) the emulation by the underdeveloped countries of the standard of living of the developed countries makes them spend beyond their means and thus making the shortage of foreign exchange a chronic economic phenomenon
(e) the desire on the part of the underdeveloped countries for economic growth may result in the difficulties regarding foreign exchange

It is said that technological improvement takes place at a faster pace in a developed countries (D) than in an underdeveloped country (U) This means that there will be a constant rise in the productivity of D when compared with that of U Higher rate of productivity according to some economists may stand for two things

(i) Cheaper price of the product of D in comparison with that of U
(ii) If the money incomes do not rise *pari passu* with the rise in productivity the relative price differences between D and U will be great and ultimately the latter will have to face balance of payments difficulties and this situation may be perpetual

The price of a commodity is likely to be cheaper after the advantages of technological improvements have taken place than before the discovery of such economies Dr Balogh[1] thinks that the price of an internationally traded commodity is determined by absolute costs and not by comparative costs as conceived by most of the economists Comparative costs are unknown to entrepreneurs and governments conducting trade They act (in the absence of direct controls) on the basis of money prices and exchange rates [2]

If Dr Balogh's assertions are correct cost reducing technical innovations in D will increase her exports to the rest of the world provided the

[1] Balogh *Dollar Shortage*
[2] *Ibid*

exchange rate does not alter The rise in the national income of *D* due to increased exports may increase her imports provided her imports are income elastic and/or the production for her exports requires quite a large amount of imported raw materials But as a matter of fact *D*s demand for imports is more or less inelastic because she mainly imports primary products and secondly import content of exports is gradually declining due to modern innovations (The instance of the United States may be a representative one for *D* type of countries) Therefore a rise in her exports will lead to an increase in the deficit of the balance of payment position of *U*

There is no reason to think that Dr Balogh's assertions are absolutely correct As a counter argument we may point out that although the United States textile industry is highly mechanised still the government has to impose high tariffs to protect that industry from the British competition

Moreover the very continuation of trade between traditionally advanced country with low labour input per output and moderately advanced country with high labour cost of production proves that the theory of comparative costs need not be rejected altogether

Furthermore it is not correct to maintain that *D*s production in all spheres and at all times will increase much faster than that of *U* For example production of raw materials has increased faster in the rest of the world than in the United States whereas the ratio of increase of agricultural product to the increase in population is almost the same in both Manufacturers increased three and half per cent in the United States and two and half per cent per annum in the rest of the world during 1918-50 Otherwise the opposite was the rule* It is although true that productivity per man hour has increased at a faster pace in the United States than in the rest of the world but it is mainly due to the fact that the production of the former is capital intensive and that of the latter is labour intensive So it is very likely that production per unit of capital employed has increased at a higher rate in the rest of the world than in the United States

Therefore differences in productivity between the United States and the rest of the world are not such as to make all American products relatively cheaper than that of the latter and the former can still profitably import certain commodities from the less efficient countries because of their comparative advantage in the production of them From this we may conclude that foreign exchange difficulties of an underdeveloped country are not likely to be the result of differences in productivity alone

There is no natural corollary from this that country *U* should specialise in the production of those commodities in which she enjoys comparative advantage or her economic expansion should take place in the form of further development of primary producing industries in order to solve her foreign exchange difficulties But such a policy on the other hand may

* McDougall "A Lecture on the Dollar Problem" *Economica 1954*

enhance her foreign exchange shortage

We have already shown that the demands for primary products of *D* are less sensitive to a fall in price due to increased production in the primary-producing industries Hence the expansion of primary producing industries will not improve the foreign exchange position of *U*, but, on the contrary, the adverse movement in the terms of trade between *U* and *D* will worsen the foreign exchange position of the former Moreover, the improvement in technology has lowered the need for imported raw materials in *D* Under such circumstances, expansion of primary production may not *ipso facto* improve the foreign exchange position of *U*.

So far we have assumed that a rise in productivity is accompanied by a proportional rise in the money incomes of the factors of production Now, we shall assume that the rise in money incomes is less than that in productivity Obviously the price of the commodities will be reduced where the improvements in productivity have taken place The improvement in productivity may have taken place uniformly in all industries which include export biased as well as "import biased"[10] industries On the other hand the said improvement may take place only in the 'export-biased or the "import biased' industries The repercussions on the balance of payments will be different, when the said improvements take place uniformly in all industries, from that taking place only in "export-biased or import biased" industries

When the improvement in productivity takes place uniformly in all industries the prices of the products of both "export biased' and import-biased industries will fall Total volume of exports to the foreign countries will rise and that of imports to the home country will fall provided, according to the well known Lerner condition, the sum of elasticities of demand for exports and imports is greater than unity and the supply is, more or less elastic So uniform development will be anti trade biased [11] for an underdeveloped country as well as for a developed country provided the increase in productivity is not greatly dependent on the import of foreign raw materials or machinery Thus there will be improvement in the balance of payments position of the country whether it is developed or underdeveloped

Again when the improvement in productivity takes place only in "import biased" industries there will be a tendency for a decline in the volume of imports This will also lead to an improvement in the balance of payments position both for the developed or underdeveloped countries

On the other hand when the improvement takes place only in the "export biased' industries, the consumers of the developed country will enjoy certain benefits of improvement Here any improvement in the balance of payments position of the underdeveloped country will take place only when the demand for its exportable goods is highly elastic and that is virtually impossible for the underdeveloped country In the case

[10] Hicks J R., "An Inaugural Lecture", *Oxford Economic Papers* (New Series) 1953
[11] Johnson, H G., *International Trade and Economic Growth*, pp 63-139

of a developed country the expansion of export biased industry will benefit the underdeveloped country because of the decline in prices and so the balance of payments position of the latter will improve

Now we can apply this principle more elaborately to the trends of trade between an underdeveloped country (*U*) and the developed world (*D*) in order to ascertain the balance of payments position of the latter

U's demand for *D's* products will be very large even at high prices because the former needed the latter's capital goods to build up an industrial base for economic development and also because of the large demand for durable consumer goods from the latter that could not be manufactured in the former Hence the demand for *D's* products is highly price inelastic in *U* On the other hand income elasticity of demand for *D's* goods is greater than one as *U* has a large marginal propensity to import with respect to income Thus the rise in prices of the goods of *D* does not lead to a proportional decline in the demand for them as *U's* demand for its products is inelastic to high prices upto a certain point and also *U's* demand for them rises greatly as its money income rises

D's demand for import from *U* is absolutely inelastic as regards the products which the former or any other countries say *X Y* and *Z* cannot produce But such a situation is a rarity In actuality *D's* demand for imports from *U* is more or less elastic at high prices because they can produce the substitutes themselves or import from other countries where the prices are low Again they can economise the use of imports on account of external economies On the other side of the picture the elasticities of demand for most of the primary commodities are less than unity at low prices because higher incomes which are equivalent to low foreign prices do not induce the people to consume more staple foodstuffs and similar commodities In a nutshell *D* has a kink shaped demand curve for imports from *U*

But in the case of raw materials which are the basic inputs of the manufactured output *D's* demand for imported raw materials may be income elastic But even in this case the volume of demand for imports from *U* is likely to fall gradually on account of technical innovations which reduce the ratio of raw material to the manufactured articles

It is well known that the developed countries usually sell their products in the developed world In other words the bulk of the manufactured products of the manufacturing countries is consumed by themselves Thus the elasticity of supply of exports of *D* is likely to be elastic But an underdeveloped country has no internal market for its exports until it reaches a certain level of development Again each underdeveloped country is somewhat dependent for its exports on particular developed country or countries And that is why *U's* elasticity of supply of exports may be inelastic to a certain degree

Thus we may conclude from the above analysis that the elasticities of demand for imports as well as supply of exports of *D* and *U* are such that under present circumstances the latter will suffer from

chronic shortage of foreign exchange

It may be added here that there is hardly any correlation between American imports and the dollar deficit of the rest of the world that existed till 1958 Statistical data of the period 1919 54 show that the balance of payments deficit of the *non dollar countries is independent of the fluc*tuations in the American imports Similarly, the foreign exchange difficulties of a developing economy are the outcome of the peculiarities of its demand for the products of a developed economy and not the other way round

Again the propensity to save is considerably high in the developed countries This is because their national incomes are very high and so their marginal propensity to consume is low and hence, the marginal propensity to save is high But this expansion of saving is not accompanied by corresponding enlargement of their investments in underdeveloped countries In other words, the surplus in their balance of trade is never counterbalanced by a deficit in the balance of lending This will tend to lead to a shortage of foreign currencies for the underdeveloped countries whose imports from the developed countries exceed the exports

Some comments may be made regarding the economic structure of the developed countries The argument here will be a continuation of the arguments of the above paragraph The high rate of saving in the developed countries may eventually lead to a depression as investment opportunities there may not be sufficient to absorb all savings If saving exceeds investment in those countries for a long time, depression is likely to start again throughout the world and will lead to a further shortage of foreign exchange for the underdeveloped countries

This apprehension may be theoretically justified, but it does not correspond with facts The prediction of many economists that Second World War would be followed by a world wide depression had not come true The present trends of production in the developed world are such that depression may not take place in the near future Thus the high rate of saving of the developed world may not be quite disastrous for the underdeveloped world just at present as suggested earlier

IV

Various remedies have been suggested to solve the foreign exchange difficulties of the underdeveloped countries and they may be broadly grouped into the following categories

(i) Production measures,
(ii) Capital movement,
(iii) Monetary and fiscal policies
(iv) Foreign exchange policies,
(v) Trade policy

(i) *Production Measures* We have already observed that 'export biased production is not likely to help a developing economy to minimise its foreign exchange difficulties as the demand for primary products of the developed countries is, more or less, inelastic

Now, even if we assume that there is great competition among the primary producing countries for the sale of their products, and that there is high price elasticity of demand in the developed countries for the primary products, the expansion of 'export biased industries is not likely to be helpful for a developing economy because of the probable existence of inflationary pressure in the home market Besides, will not a general rise in the volume of exports, when the supply of imported consumer goods and exportable goods for home consumption are low, because of added emphasis for the development of capital goods industries, precipitate inflation? Inflation might, on the other hand, reduce the volume of exports as the price of the exportable goods might become less competitive in the international market Further, a rise in the price of exportable goods may induce the entrepreneurs to turn to the home market for their disposal and not bother about export Thus, any inflationary pressure caused may adversely affect exports in two ways foreign buyers may not purchase the products of the developing economy because of their high prices and producers of that economy may not be inclined to sell in foreign markets because of low international prices Under such circumstances, it is not desirable that an underdeveloped country should expand its "export biased' industries particularly those industries which produce primary products This does not mean that exports should altogether be stopped, it means that the surplus, left over after home consumption, over and above that of the traditional commodities should be exported

An underdeveloped country would develop "import biased industries Now "import biased' industries for a developing economy will mean primarily manufacturing industries This will require foreign technical know how and capital goods and as such it is likely to increase the foreign exchange shortage at the initial stage But the development of 'import biased industries in an underdeveloped country may solve the foreign exchange difficulties in the long run Furthermore the development of certain import biased" industries may attain such scales of production that the developing economy may eventually begin to export the products of those industries and thereby reduce the gap in the balance of payments position

(ii) *Capital Movement* The ideal way to solve the foreign exchange shortage of an underdeveloped country is to finance the shortage by way of borrowing from the foreign countries This can be done by the movement of capital from the developed to the underdeveloped countries Some kind of compensatory financing on the part of developed countries can be continued until the deficit is eliminated, and the underdeveloped countries can stand on their own feet If the financing is available for

high level of consumption only, it is required to be a perpetual one So the financing aids should be primarily given to enhance the total production of the developing countries and in this way the shortage of foreign exchange may be eliminated

The movement of capital from the developed to the less developed countries is beneficial not only to the latter but also to the former On the one hand it will increase the volume of investment in the under developed countries and thus enhance its level of employment as well as the national output, on the other hand the volume of exports and hence, the national income of the lending country will also rise

It may be noted that the inflow of funds in the lending country in the shape of interest payment and the repayment of borrowed capital may exceed the outflow and thus adversely affect the employment level of the lending country [3] The remedy for the problem lies in the cancellation of the trade surplus of the developed countries for few years until the underdeveloped countries can eliminate the balance of payments deficit

(*iii*) *Monetary and Fiscal Policies* Monetary and fiscal measures to check the shortage of foreign currencies must be deflationary The main purpose of these measures will be to reduce the purchasing power of the people Under this policy the government will have to take recourse to bank rate policy and open market operations They will also have to minimise government spendings and public works They may also have to impose new taxes and prevent investments by refusing to give permission for new industries The cumulative effect will be a reduction in the effective demand of the community and so the excess demand for the foreign exchange may be reduced

The adoption of deflationary measures to solve the foreign exchange difficulties is the very anti thesis of economic development and thus it is not possible and desirable to practise them in a developing economy

(*iv*) *Foreign Exchange Policies* The most popular of all exchange policies to adjust discrepancy in the balance of payments is depreciation Many countries after the Second World War have depreciated the value of their currencies in terms of dollar

Depreciation is supposed to solve the problem of deficit in the balance of payments in two ways

(*i*) As it lowers the value of home currency in terms of foreign currency/currencies it is likely to increase the volume of exports provided the elasticity of foreign demand for home goods is above unity

(*ii*) As it raises the value of foreign products in terms of home currency, the volume of imports is likely to fall assuming the home demand for imports is highly elastic

[3] Salant "The Domestic Effects of Capital Exports under the Point Four Programme", *American Economic Review* May 1950

If the above two conditions are fulfilled depreciation will invariably lead to an improvement in the balance of payments position and a proper depreciation of currency may be expected to eliminate any shortage of foreign exchange of an underdeveloped country

But as we have shown before that the underdeveloped country's demand for the products of the developed countries is price inelastic to a great extent the raising of the price of the latter's products through depreciation is not likely to reduce the demand for them to a great extent On the other hand as the elasticity of the developed world's (*D*) demand for the underdeveloped country's (*U*) products is not very high at low prices the lowering of the prices of the foreign primary products will not lead to a proportional rise in its demand for them Hence depreciation is not likely to improve appreciably *U's* foreign exchange difficulties

Again if a policy of depreciation is adopted by an underdeveloped country during a period of economic growth there is every likelihood that domestic prices will be raised to such an extent as to make it totally ineffective This will be so because the trade unions enjoy better bargaining power during the period of development than in any other period and so will be successful in raising the wages following the rise in the cost of living due to depreciation Moreover increased demand for domestic goods in place of foreign goods may raise the price of domestic exportable goods to such an extent as to neutralise the reduction in the price of them in terms of foreign currencies So when depreciation leads to inflationary pressure in the home country balance of payments position cannot be improved except when a currency is overvalued and the depreciating country is an important exporter to the non depreciating country

The failure of currency depreciation to solve the foreign exchange problems has led a group of economists to suggest that appreciation may solve the problem [1] Their arguments are based on the assumption that the elasticities of supply and demand are very low Their arguments for appreciation may be summarised as follows When international demand is inelastic the increase in the value of home currency in terms of foreign currencies will mean that goods exported by the home currency will earn more foreign currencies whereas the price of goods imported will become cheaper in terms of home currency if the value of home currency is appreciated Therefore the balance of payments position will improve no doubt and the shortage of foreign currencies may be eliminated

The main defect of the policy of appreciation as a method of solving the foreign exchange problem is that it will lead to an increased competition in the export markets of the home country Therefore a single underdeveloped country can never adopt such a policy of currency management in the fear of losing the entire foreign market But if all the underdeveloped countries suffering from foreign exchange difficulties agree to

[1] See Samuelson's Disparity in Post War Exchange Rates in S E Harris Ed *Foreign Exchange Policy for the United States*

appreciate simultaneously the value of their currencies in terms of the value of the currencies of the developed countries in contravention with the regulations of the International Monetary Fund appreciation may reduce their shortage of foreign exchange But if we assume that the developed countries demand for imported goods at high level of prices is elastic the above method will be of no avail Again when the countries that appreciate their currencies export small volume of goods to the developed countries but imports large volume from the developed areas appreciation will not much help to reduce the shortage of foreign exchange

(v) *Trade Policy* It is suggested that imposition of tariffs on the goods imported from the developed countries and giving subsidies to the firms who are exporting goods to them may help to eliminate the foreign exchange shortage It is further claimed that imposition of high tariffs is equivalent to currency depreciation

The imposition of high tariffs will fail to improve the shortage of foreign exchange of an underdeveloped country when the demand for goods especially capital goods produced in the developed areas is inelastic On the other hand a shift in the demand for goods produced by the developed countries may increase the demand for domestic goods including exportable goods in an underdeveloped country This may reduce the total foreign exchange earning of the developing economy and so the difficulty will remain

Import quotas are described as another method of decreasing the gap in the foreign exchange of an underdeveloped country By the establishment of import quotas we shall be able not only to restrict the import of foreign goods but also to control the quantity and the types of them This is a type of discrimination.

Trade discrimination can seldom eliminate the foreign exchange deficit of an underdeveloped country After all the very growth of the country depends on the availability of capital goods from the developed areas But the import of consumption goods of the developing country should be reduced as far as possible Still discrimination as an instrument for reducing the shortage of foreign exchange will be somewhat ineffective because of the import dependent development of the underdeveloped countries

The best trade policy for a developing economy is to enter into bilateral trade agreements with each developed country In this way an underdeveloped country can ensure its exports to the developed countries even when the prices are high Besides such arranged exports will help the developing economy to repay the borrowed capital as well as the interest on such capital in course of time

V

We have discussed at length the causes of foreign exchange difficulties of a developing economy Further we have suggested that an underdeve

loped country should expand primarily import biased industries with a view to minimise the gap in the balance of payments position in the long run But in the short-run period the best policy for it will be to import foreign capital for domestic expansion A pertinent question may be raised regarding the *raison d'être* of the assumption that the investors of the developed countries will agree to export capital to the underdeveloped countries, particularly when the return of capital is quite high in the former The answer may lie on reasons which are not wholly economic, but mainly political Otherwise, we cannot explain the present day inflow of capital, lent by foreign governments, in the underdeveloped world Besides the economic expansion of an underdeveloped country will undoubtedly make it more attractive to foreign investors

We do not know of any magic that can solve the foreign exchange problems of an underdeveloped country But economic growth is very likely to reduce the difficulties in the long run

Index